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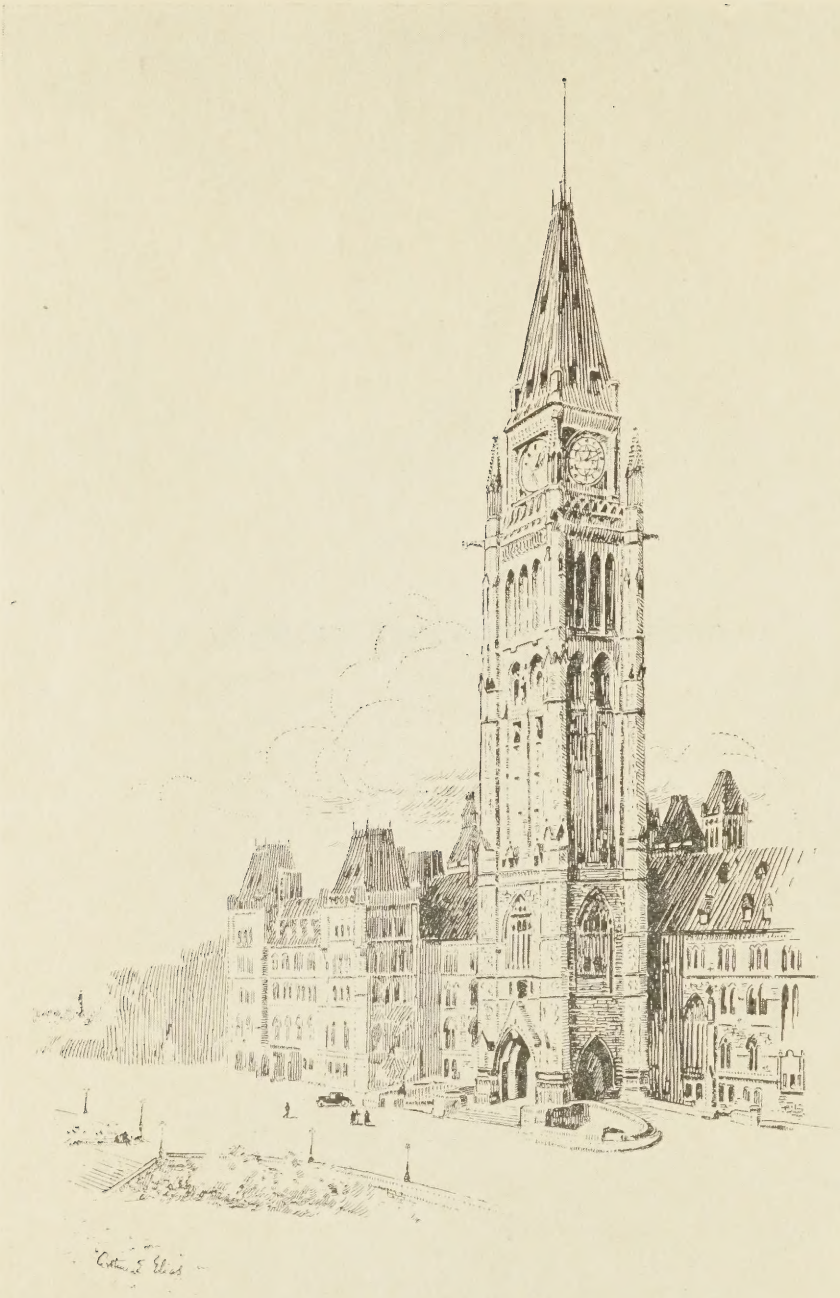

CANADA'S VICTORY MEMORIAL TOWER
PARLIAMENT BUILDING, OTTAWA

CANADA

AS A

NATIONAL PROPERTY

DEPARTMENT OF THE INTERIOR
CANADA

HON. CHARLES STEWART
Minister

W. W. CORY, C.M.G.
Deputy Minister

NATURAL RESOURCES INTELLIGENCE SERVICE
F. C. C. LYNCH, *Director*

Ottawa, 1926

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F. C. C. LYNCH.

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FOREWORD

Few countries today enjoy stronger faith in their future economic growth than Canada. Many factors contribute to that confidence. But with the Dominion, as with any youthful country, one feature in particular—the undoubted capacity of its physical estate to support greater development—enters much more actively into the assurance of progress than is the case with older countries whose natural assets have long been well known, if not fully employed.

The Canadian people possess a national estate neither fully employed nor well known. Each year sheds new light upon the country's productive value, and the purpose of the present booklet is to sketch briefly, in the light of the most recent information, some of the varied natural features and resources which combine to make the Dominion one of the world's good national properties.

CHARLES STEWART,
Minister.

Department of the Interior,
Ottawa.

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I

THE VERSATILITY OF CANADIAN GROWTH

It is not overstepping the mark to say that Canada's advance in the last twenty-five years ranks as one of the features of the world's recent economic progress. Nowhere, during the present century, has national growth advanced along a wider front.

While certain phases of Canadian growth during that period were clearly foreseen by those who knew the country, other phases were almost wholly unexpected. The capital factor in the Dominion's progress—the sweep of settlement over the western prairies—was in some degree anticipated. Very few persons, however, had the slightest inkling of the manner in which the business life of Canada was to be re-inforced by other events—by the 'miracle of paper', by the rise of modern hydro-electric development, by the opening of great new mineral areas.

Entering the second quarter of the century the Dominion carries forward high prospects. No one can predict how its record of progress will compare, either in extent or in nature, with that of the first quarter. But the fundamental fact that still stands out is the comparative strength of Canada's capacity for growth. No group of nine or ten million people anywhere possess a physical estate which excels the national domain of the Canadian people

in extent, productive value, access to markets and proximity to the attention of the world's centres of capital and enterprise. Canada enjoys as much and as many of both the natural and commercial advantages for growth as any country could reasonably wish to command.

The Natural Strength of the Dominion

The most impressive feature of Canada as a national property is not its size, nor its length, nor its breadth, nor any one of a dozen other physical facts often cited. It is quite true that the Dominion covers an enormous square mileage, that it surpasses the United States in area and is exceeded in size only by Russia and China, that it is broader than the Atlantic and nearly as large as Europe. But these and similar facts are not of prime importance in an economic sense.

Nor does the real strength of the country lie in its wealth of any one form of natural resource. Canada today is best known to the business world by reason of its colossal grain trade, but it is not to be assumed that the Dominion is relatively richer in arable lands than in forests, minerals, water-power or fisheries. In fact, while Canada stands well up among agricultural countries, its rank among nations is even higher in other respects, notably in forest and water-power development.

From a business standpoint the strongest natural feature of the Dominion is the *diversity* of its assets. Canada is not and never will be a country with all of its eggs in one basket. Its growth is fed from many sources.

Instead of being uniquely equipped by nature in one or two directions and niggardly endowed in others, the physical property owned by the Canadian people includes a liberal measure of every form of natural resource. It is a country where no broad class of industry need be stunted. Agriculture and mining, fishing and forest industries, power development and manufacture have all been naturally equipped to reach and retain first-class stature. Every natural avenue of economic advance is open to the Dominion.

It requires but a fleeting glance in three or four directions to illustrate and confirm the varied sources of Canada's recent progress and the versatility of the country's outlook.

The Advance of Agriculture

Canadian agriculture has made such strides since 1900 that it is hard to select facts capable of conveying the real measure of advance. The brief term of twenty years saw more new land taken up as farms than had been so occupied in the whole period of nearly three centuries prior to 1900, and the Dominion rose from a minor position in cereal commerce to that of the world's premier wheat-exporting country. Nor has wheat-farming monopolized recent growth. Dairying is a huge and progressive rival. Ranching, stock-farming and fruit-farming are important. Tobacco culture and fur-farming typify new fields of solid progress and greater promise.

As to the future, no branch of farming enterprise in Canada has yet reached its full stature. It is true that pioneering conditions have been radically changed and that future settlement will proceed under a much more moderate speed limit than the open prairies of a quarter of a century ago imposed. But, if the latest estimates now available are of any value whatever, hardly half of the possible farm-land in the Dominion is yet occupied.

The 'Miracle of Paper'

Forest development has added to the Dominion's recent history a record of achievement rivalling that of agriculture. The 'miracle of paper' has transformed the face of Canadian forest industry. For generations lumbering has been a major enterprise in the business life of Canada but in the last two decades the revolution in the paper situation on the North American continent has given the Dominion's forests a wholly new value as a commercial asset. Within ten years Canada's output of paper has been doubled and the Dominion has become the world's largest producer, as well as exporter, of newsprint. Pulp and paper development is still

advancing. New units of the industry are searching out every favourable location for wood and power supply.

So rapid has been the growth that the Dominion has not had time adequately to take stock of the physical limits upon future expansion but, besides rearing a gigantic new factor in the commercial life of the country, the rise of the pulp and paper industry has rendered the vital service of redoubling practical business interest in the cause of sound forest management.

Varied Mineral Development

The exceptional variety of the country's mineral wealth has provided a third broad highway for Canadian progress. Canada's present mining industry stands out in notable contrast with that of twenty-five years ago. Gold and coal were then the only large items of mineral output. Coal mining was important in Nova Scotia, but British Columbia and the Yukon engrossed mining interest.

To-day mining enterprise holds a much longer line and is spread over a vastly greater territory. It has opened such new fields as the world-famous gold and silver regions of Ontario, the coal, oil and natural gas areas of Alberta, the mineral belts of Manitoba and Western Quebec. Mining industries which at the start of the century boasted but slender output have expanded many-fold and the Dominion's mineral production now counts among its substantial items not only gold and coal but silver, copper, lead, nickel, zinc, asbestos and natural gas—not to mention a dozen others of material value. It is a remarkable fact that Canada's mineral output to-day includes practically every major metal entering into modern commerce.

As to future progress, no main branch of Canadian development exhibits a more active immediate programme of expansion. And, certainly, none enjoys a greater potential field for long-time growth.

Water Power and National Growth

The most casual glance at the varied elements contributing to Canada's progress could not fail to observe the peculiar importance of water power and hydro-electric development. In the last twenty

years Canada has been the scene of an immense and continuous program of water power installation. Every factor has combined to make the country's magnificent water resources a prime force in national growth—the coal handicap of Central Canada, the heavy power needs of pulp and paper, mining, and electro-chemical enterprise, the general growth in the industrial and domestic demand for electric current.

To-day the Dominion holds a premier position in the generation of electric power per capita. Abundant power is one of the strongest links in the whole chain of Canadian industry. New development proceeds apace and the year 1925 broke all previous records by the addition of over 700,000 horse-power to the total installation. With only a small proportion of the country's resources yet harnessed, there can be little doubt that water power and hydro-electric development will long continue to function as a strong factor in Canadian growth and as one of the Dominion's senior attractions to capital and enterprise.

* * *

The foregoing sketch by no means measures the full breadth of the Dominion's recent economic advance. It merely touches four signal instances of the vigour of Canadian progress in the field of natural resources development. The field of manufacturing exhibits another great series of developments, perhaps even more diverse in scope and certainly no less impressive in their respective records of expansion.

But the records of forest, agricultural, mineral and water power development amply suffice to illustrate the real versatility of the Dominion as a physical property—the diversity as well as the strength of the natural assets which Canadian growth is able to call into play.

W. W. CORY, *Deputy Minister.*

Department of the Interior,
Ottawa.

II

CANADA'S SHARE OF NORTH AMERICA

No one can get a good grasp of the nature or value of the Dominion, as a national property, merely by taking a roll-call of its natural resources. To jot down the figures of Canada's acreage of farmland, square miles of forests, tonnage of coal reserves and so on makes an imposing array of assets, but such a series of items can convey only a piecemeal picture of any country. It is much like trying to size up a house by looking at its separate rooms without regard to what is perhaps the chief point—the general plan and quality of the building.

Similarly, the general 'lay-out' of a country is one of its vital economic features. It affects the entire course of national progress and the whole utility of the country as a physical property. Certainly there is no other single factor which sheds more light upon the real character of the Dominion as a national estate or gives a clearer insight into Canadian development—past, present and future—than the physical lay-out of Canada's share of North America.

The Main Block of North America

Canada and the United States together occupy rather more than 85 per cent of North America. In size the two countries are

The map indicates only the outstanding natural regions of North America. The central portion of the United States is occupied mainly by the huge interior plain, or series of plains, while the major portion of Central Canada is covered by the Laurentian Upland, a totally different type of territory. This distinction alone creates a vast and vital difference between the two countries, as national properties.

well matched. Their difference in area is less than five per cent. The boundary line cuts the main block of the continent pretty evenly in two.

But, apart from size, there is a vast difference between the two countries as national properties. Probably nine out of every ten persons would say without a moment's hesitation that the chief difference is in climate. The more southerly position of the United States gives that country an exceptional range of natural products, while the latitude of Canada decidedly limits the productive nature of a large part of the Dominion.

Climate, however, is not the only capital point of distinction. Relatively too much attention has been paid to the climatic and too little to a second vital difference. There is a radical contrast in physical lay-out and character which, in its effect upon the development of the two countries, probably exerts just as powerful an influence as the climatic factor.

The Mid-Continent Contrast

A glance at a map of the main physical features of North America shows how the mountain-and-plateau belt of the Western States continues northward through British Columbia and the Yukon. Again, toward the Atlantic seaboard another great highland stretches from the Southern States through New York and New England into Quebec and the Maritime Provinces of Canada. Thus, broadly speaking, the cardinal western and eastern features of North America are common to both countries.

But in the central and, especially, the east-central section of the continent, Canada and the United States are strikingly unlike.

The central portion of the United States is mainly occupied by a huge plain or series of plains. This interior plain of North America has been called the "greatest storehouse of farming wealth in the world." Once the American tide of pioneer settlement had advanced through and over the Appalachian Highland, it spread out far and wide across a vast, fertile region which became the chief scene of the unparalleled growth of the United States in the nineteenth century.

A very different type of territory covers Central Canada. A minor projection of the great interior plain forms the fine farming regions of southern Ontario and Quebec, while a much larger section crosses the international boundary to the west, gives the Dominion the broad agricultural domain of the Prairie Provinces, and tapers off to the far north. But wedged between these two Canadian extensions of the plains is the huge, rocky Laurentian Upland which occupies most of the central portion and over half of the whole area of the Dominion.

The Comparative Freedom of Westward Development

Were there no variance in climate between Canada and the United States, the physical contrast between this vast Laurentian Upland of central Canada and the immense Mississippi Basin of central United States would alone bring comparison of the two countries to a sharp halt. It places them in separate categories as national properties, and largely accounts for the difference in the history of American and Canadian development.

The great natural advantage of the United States' share of North America lay in the fact that American development, having pushed inland from the Atlantic coast and across the eastern mountains, found itself at liberty to advance steadily over a huge area comparatively free of physical barriers. Entering the Ohio valley the pioneer armies deployed on a tremendous front, running the full north-and-south length of the country. Their westward march moved forward without halt, kept a fairly even front, made few detours, and left behind it no large unsettled areas. Tier after tier of rich new agricultural states were set up reaching from the Great Lakes to the Gulf of Mexico and from the Red river to the Rio Grande.

Upon Canadian development nature imposed a different course. The St. Lawrence waterway gave ready access to those portions of the great interior plains projecting into Eastern Canada, and for a period the earlier Canadian settlement kept pace with the American westerly trek. Ontario matched progress with Ohio. But at the

Michigan boundary the Canadian line of advance was stopped short by the upward swing of American territory. Blocked toward the west Canadian settlement turned to the north, overran the relatively small plains area of Ontario and again found itself blocked by the Laurentian Highland.

The Earlier Effect of the Laurentian Region

The Laurentian Highland confronted Canadian settlement with a barrier such as the march of the American pioneer never encountered. A thousand miles of rugged wilderness, for the greater part hostile to agriculture, separated the Canadian landseeker from the vast expanse of fertile plain lying far to the west. The Laurentian region offered canoe route for the fur-trader but no trail for the covered wagon. Railway finally bridged the gap, but for a generation or more Canadian settlement found its course checked both to the west and to the north. Barely more than the vanguard of agriculture had passed across or around this Laurentian wedge and reached Western Canada until, in the early years of the twentieth century, the Canadian prairies at last became the magnet for what a competent American observer has described as "the greatest rush for farm lands in the world's history."

For this contrast between the rapidity of Canadian and American progress the difference in climate has probably borne too much of the responsibility. Certainly the position and nature of the Laurentian Highland stands second to none among the physical causes that postponed the westward reach of Canadian development. American settlement, delayed by no such barrier and keeping its northern advance practically abreast of its central and southern line, was moving forward on a front reaching from Minnesota to Texas at a time when Canadian explorers were still seeking a suitable route leading from Lake Superior to the prairies.

As late as 1900 the main stage of Canadian development lingered east of Lake Huron where the varied resources of the Atlantic Provinces and of southern Ontario and Quebec had given the Dominion a moderate counterpart to American development in New England and along the St. Lawrence and the lower lakes. Farther

west, Canada had achieved the tremendous task of building its first transcontinental railway, but as yet possessed only the strong outposts of settlement and industry.

Canada in Twentieth Century Light

To the great good fortune of the Dominion the new century has lost no time in revealing a real, coast-to-coast view of Canada's natural productive strength.

The last twenty-five years have placed the whole east-and-west line of Canadian territory in a clearer light. Huge gaps in development have been closed, others lessened. Settlement has spanned the prairies and to-day it is the western half of the continent that exhibits the Dominion's closest counterpart to American development. The broad southern band of Western Canada, extending from mid-continent to the Pacific, is narrower than the American West in its mountain-and-plateau belt, more fortunate in the length of its arable plains, much less invaded by areas similar to the arid and desert regions of the Western States. Through the agricultural wealth of its prairies, the minerals, forests, fisheries and other assets of its Pacific coast and highland, the Canadian West has rapidly and radically revised the whole aspect of the Dominion as a national property.

And, perhaps even more welcome because less foreseen, the twentieth century has decisively shown that the value of Central Canada is no longer to be judged in the light of the pathless barrier thrust across the course of early settlement by the Laurentian Highland.

This vast area, more commonly known as the Canadian Shield, has emerged in a new role. Canadian development has retraced its steps eastward and the wilderness of a generation ago has become, in its southerly section, one of the commanding scenes of current Canadian progress. To-day the prospector and miner, the pulp and paper operator and the water power engineer are spreading a new net of development over a huge territory little known until late years except to the lumberman, fur-trader or sportsman.

The Laurentian Highland—or Canadian Shield—does not and never will present in Central Canada a counterpart to the Mississippi valley of the Central States, but the astonishing disclosure and development of its natural wealth in the last decade have left no doubt of its capacity to make, along entirely different lines, a great and positive contribution to the business life of the Dominion.

Canada's Cardinal Quality

The record of the last quarter-century, coupling in its brief span such remarkable events as the transformation of the West and the virtual re-discovery of the Laurentian region, leaves little temptation to try at this stage to "sum up" the possibilities of the Dominion. The country is not ready to be "summed up." Its recent development has broken too many traditions, made too many striking discoveries, gained too much new motive power from the forces of modern science and commerce. The country is essentially a *growing*, not a fixed, quantity.

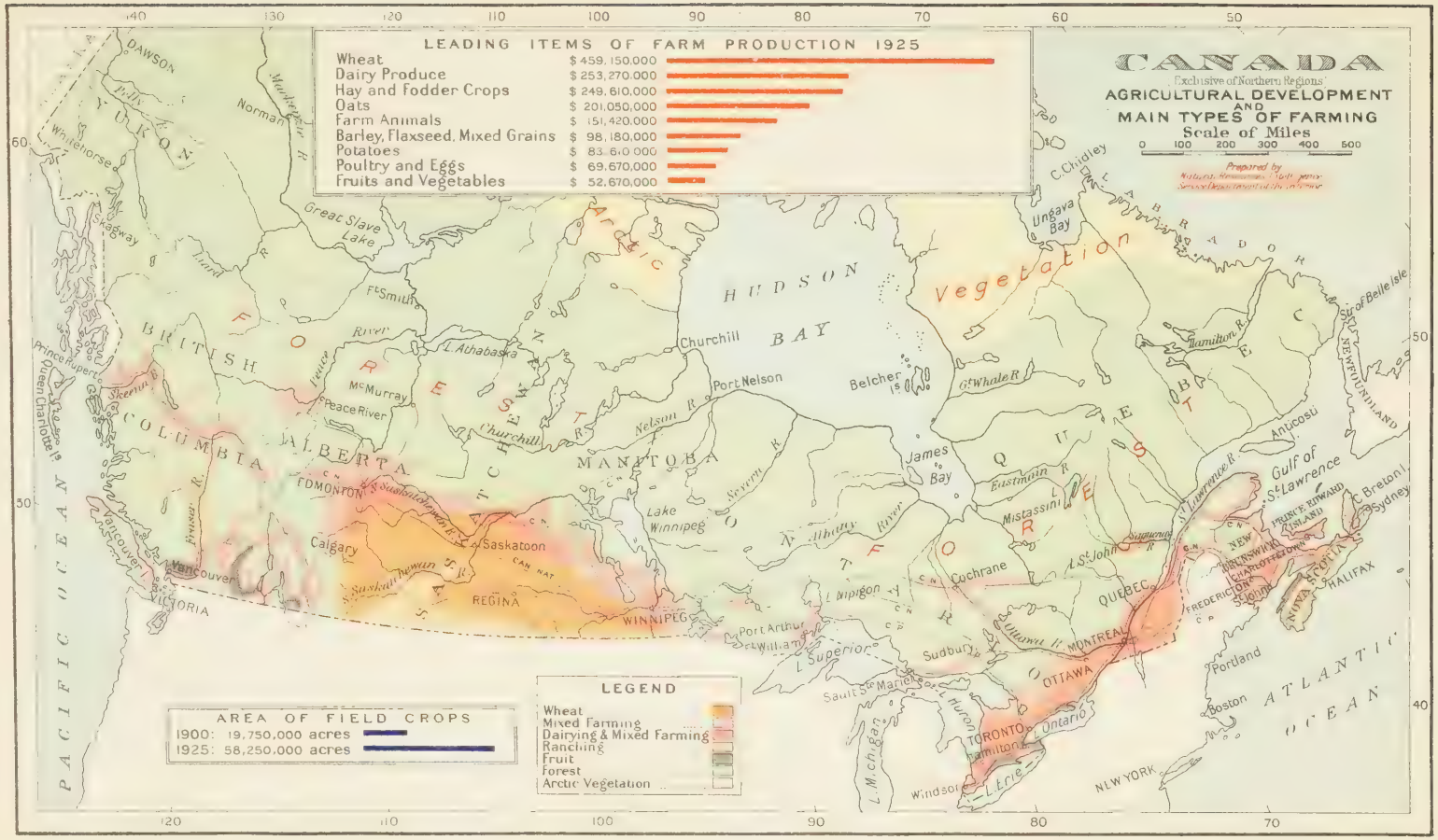
Volumes might be written on each of a dozen different features of the Dominion as it appears in twentieth century light, but the outstanding fact is that Canada is to-day a younger country in an economic sense than it was a generation ago. While neither the Dominion nor any other country in the world can in this age flaunt the boastful claim of possessing "unlimited" natural resources, the American statesman who more than half a century ago described the Dominion as "vigorous, perennial, *ever-growing*," put a sure and true touch upon the cardinal quality of Canada's share of North America.

III

THE FIELD OF CANADIAN AGRICULTURE

Barring always its human resources, arable land forms Canada's greatest single economic asset. But to speak of the "field of Canadian agriculture" is hardly correct, for the feature of agriculture in the Dominion is its many and distinctive fields. There is no such thing as the typical Canadian farm. The Canadian farmer may be dairyman, grain-grower, orchardist, tobacco farmer, or may follow any one of half a dozen other lines of husbandry. His landscape varies all the way from the broad expanse of level, open prairie to the wooded slope of a river valley hemmed in by towering mountains.

Nor does the field of Canadian agriculture lie within definite known bounds. Its physical limits refuse to be fixed. Within the last generation more than seventy million acres of new land have been brought into occupation, mostly in regions which at no very remote period were deemed of little agricultural use. Even to-day the most careful soil and climatic studies can only roughly estimate the extent of Canada's potential farmland, for the latest triumphs of wheat-breeding bid fair to roll back the climatic handicap of millions of acres which but yesterday seemed to lie beyond the pale of commercial agriculture.



The map outlines the chief developed farming regions but is not to be regarded as delimiting the actual extent of the Dominion's arable lands. The western plains, settled mainly within the last quarter-century, stand out as the broadest expanse of the modern field of Canadian agriculture. The green colouring, for the wooded areas, is not intended to suggest uniform density of forest growth.

The New Outline of Agricultural Canada

Steadily, however, the agricultural map of the Dominion is taking shape. The last two or three decades have wrought an amazing change. For generations the main stage of Canadian agriculture lay in the East—in the fertile river valleys and coastal regions of the Maritime Provinces, and in the rich plains areas of Ontario and Quebec, adjacent to the St. Lawrence and the Great Lakes. To-day each of the Dominion's nine provinces exhibits agricultural development on a large scale.

British Columbia's valleys, uplands and coastal areas are the scene of a marked variety of farming and grazing enterprise. North of the old-settled regions of Ontario and Quebec a long wedge of pioneer settlement has entered the great Clay Belt lying between James Bay and the upper Great Lakes. But the outstanding feature of the whole profile of Canada's enlarged agricultural outline is the huge block of arable land reaching from the Lake of the Woods and Lake Winnipeg to the foothills of the Rockies. Here has arisen, within years too recent to require recital, an agricultural empire which has changed the entire balance and aspect of the Dominion, from a farming standpoint. To-day, in their gross annual agricultural revenue, the four provinces of the West hold practically an even balance with the five provinces of the East.

Canada's Modern Diversity of Farming Regions

Thus only within very recent years can it be said that even a fair preliminary outline of the domain of Canadian agriculture has appeared. In fact, about half of the total area now believed to be potentially suitable for farming still remains unoccupied. But whereas hardly more than a generation ago the whole agricultural value of Western Canada was still the subject of widespread doubt, the present century has seen the Prairie Provinces take rank, both in value and in extent, as one of the major assets not only of North American but of world agriculture.

While the sweep of settlement across the prairies, the long wedge of colonization skirting the railways of the Clay Belt, and the other

pioneering advances of the last generation have closed enormous gaps in the east-and-west line of Canadian farm development, the distribution of arable lands is such that the Dominion need hardly expect to weld an unbroken chain of farming activity reaching clear across the country. It exhibits, rather, a series of splendid but more or less distinct agricultural areas, separated from each other in some regions by narrow intervals and, in others, by considerable stretches of unsettled country. Between Prince Edward Island on the Atlantic coast and Vancouver Island on the Pacific, these farming regions display a remarkable diversity of contour, soil and climate, and a corresponding variety of crop production.

The Economic Strength of Canadian Agriculture

From this occupied portion of the Dominion the value of the products of all kinds, vegetable and animal, turned out in 1925 was roundly $1,700,000,000, and the average farmer's income exceeded $2,000 for that year. Considering that a large proportion of Canadian farmers occupy but small farms and carry on in but a small way, one cannot but be impressed by the very comfortable average income. While comparative figures are not available for all countries, it is practically certain that in no other country did the farmer enjoy such prosperity, and it is quite certain that no other large class of Canadian citizens received anything like the same generous reward for their effort and their investment.

Occupying the more northerly part of the continent, Canada finds itself under peculiarly favourable climatic conditions for the production of a superior quality of practically all merchantable farm crops and products. Canadian wheat has long been the best on the market—the wheat that sets the standard for the world and that is used to grade up the flour from all other wheats in the great wheat-consuming countries of the northern hemisphere. Canadian fruits, possessing a colour and flavour all their own, win in every competition. Canadian cattle, cheese, eggs and bacon are recognized as the best that reach the British market—distance considered, of course, in the case of such highly perishable products as bacon and eggs.

The Chief Grain and Forage Crops

Among Canada's principal agricultural products wheat and the coarse grains must receive first mention. As already intimated, Canadian wheat is of exceptional quality and is now produced in such volume as to rank as the chief factor in the international wheat trade. Grown mainly in the three great Prairie Provinces, Manitoba, Saskatchewan and Alberta, it is likewise produced in all of the others, and in most of them at a good margin of profit. Oats and barley are staples in every province. Prince Edward Island oats have long been famous, while Alberta also is noted for this grain as well as for excellent barley, some of the latter being of superior quality for malting. Rye and buckwheat grow readily in every province and flax, for seed, does well on the prairies. Flax, for fibre, is a success in Ontario and the other eastern provinces as well as in British Columbia.

The most important forage crops are the clovers and grasses, many of which thrive in every province. Alfalfa is a staple in Ontario and Alberta and its culture is spreading into all of the other provinces. Corn and sunflowers, the principal ensiloing crops, do well throughout the Dominion, corn being particularly valuable in Quebec, Ontario and Manitoba, while sunflowers do well everywhere.

The Variety and Importance of Other Crops

In the Maritime Provinces, eastern Quebec and northern Ontario, potatoes of exceptional value for seed purposes are grown in large quantities and command a high price. The potato is likewise sold as table stock to many parts of the world. Tobacco, another crop that is gradually but surely growing in importance and improving in quality, is produced for export in Quebec, Ontario and British Columbia. The demand for well-grown leaf of the right sort is beyond the supply. The future looks bright for this industry and expansion seems certain. The sugar beet succeeds well in certain districts and considerable areas are grown in Ontario and

Alberta. There appears to be little reason why its production should not spread, since experiment goes to show that beets of good quality can be produced at reasonable cost in other provinces.

Fruit farming is a widely distributed form of farm enterprise, apples being the most important orchard fruit. Peaches, pears, plums, cherries, however, as well as the small fruits, are also grown in abundance, while extensive vineyards are a prominent feature of the Niagara peninsula. The most renowned fruit districts of the Dominion are the Annapolis valley of Nova Scotia, the St. John valley of New Brunswick, the Niagara peninsula of Ontario and the adjacent counties, and the Okanagan and other valleys of British Columbia. Certain Canadian small fruits such as strawberries of superior quality, coming as they do after the crop is harvested in the United States, are finding a ready sale in that market and a very important industry seems to be developing.

The Dairy Industry and Trade

No country can hope to prosper agriculturally where the domestic animals and their products do not play a large part in the economy of the nation.

Canada, fortunately, is well fitted to carry on livestock husbandry. Dairying, in particular, to-day takes rank as one of the Dominion's greatest and most widespread sources of wealth. Dairying is the great farm industry in Ontario and Quebec and is rapidly increasing elsewhere, notably in Manitoba, Saskatchewan and Alberta. The popular dairy breeds are Holsteins, Ayrshires and Jerseys, with a few Guernseys in Nova Scotia and Quebec and Ontario, and a considerable number of French-Canadian cattle in Quebec.

Canadian cheese is recognized as the best that reaches the British market, about 150,000,000 pounds being sent over there in 1925. Canadian butter, of which there was no export for a number of years, is not so popular as Canadian cheese, but is gaining in favour on the British market. A new export trade has recently come to the fore in Ontario and Quebec—the shipping of whole milk and cream to the United States. The great eastern American

cities require immense quantities of these products and are ready, and even forced, to go far afield to find their supplies. Such shipments from Canada last year exceeded 25,000,000 pounds of butter fat, largely in the form of cream testing between 40 and 45 per cent butter fat. Another growing branch of the dairy industry is the condensed milk business. Each year sees many millions of gallons of the very best milk converted into this valuable product and shipped from Canada to all parts of the globe.

The Range of Live Stock Enterprise

The number of swine in the Dominion, in proportion to the country's population is, with one exception, the highest in the world. Canada has about 58 hogs, Denmark about 78, United States about 48, and Great Britain 13 or 14 for each 100 of population. Obviously Canada is finding hog production profitable, and it would look as though expansion might and would continue. Canadian bacon, in spite of the handicap of distance from the British market, as compared with the Danish article, not infrequently commands as high a price as the latter product, and has during recent years been steadily improving in quality, due to better feeding methods as well as better curing processes and more rapid shipping. Hog production is carried on in every province and is undoubtedly a very profitable line of husbandry, whether pursued as the principal feature of the farm or as a side line in conjunction with some other main activity such as dairying. The breeds commonly kept are Yorkshire, Tamworth and Berkshire. Many very fine herds of pure breds of these breeds are to be found in the Dominion.

Beef cattle, while bred and fed in every province, are produced beyond local requirements only in Ontario, Manitoba, Saskatchewan and Alberta. Shorthorn blood predominates, with Angus and Hereford as rather minor quantities. Horses are bred to a considerable extent and seem to be gaining in popularity after a period of at least partial eclipse due to the automobile, the truck and the tractor. Sheep are found in every province, but Canada exports practically no mutton, and imports much of her wool, although she also exports some grades of wool. Sheep do well in every

province and are highly profitable. The numbers seem now to be increasing, and more farmers are finding it advisable to go in for this class of live stock.

The Poultry and Fur-Farming Industries

The Canadian poultry industry has made great progress in recent years, and is of really major economic importance. There are roundly 47,000,000 head of poultry in the Dominion, largely made up of small flocks but also including many large breeding and producing establishments, particularly in British Columbia, Ontario and Quebec. The quality of Canadian poultry produce—whether as birds, meat or eggs—is recognized the world over.

Fur-farming has come into prominence in Canada in recent years. Its centre and chief development is in Prince Edward Island. The black or silver fox is the animal most commonly bred, but other fur-bearing animals are kept to a considerable extent—raccoon, muskrat, beaver, mink and others. The number of black foxes is very considerable, probably approaching 50,000 in the breeding pens throughout the Dominion. At first on a highly speculative basis, the fur-farming business has now steadied down, prices are based on fur values, and the breeders are making great progress in improving the strains in captivity by registration of the good and elimination of the poor stock.

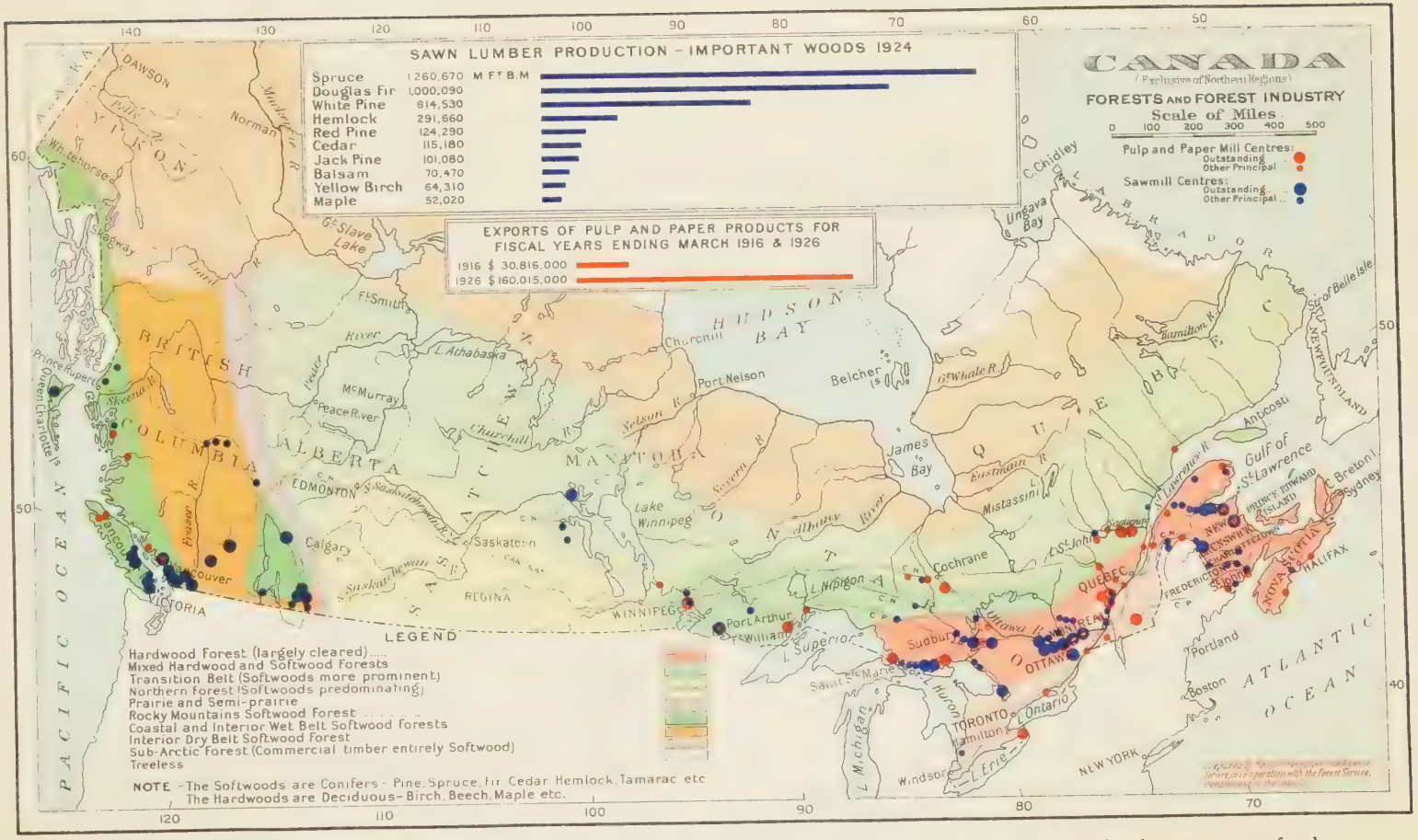
* * *

The broad and varied field for agriculture stands foremost among the major natural assets of the Dominion as a national property. As yet developed far within the limits of its productive capacity, it ranks as the greatest single source of livelihood to the Canadian people, as the chief contributor to the country's export trade and as the senior support of its general industrial and commercial life.

It is, above all, a field of growth—of agricultural and national growth not merely for years but for generations to come.

J. H. GRISDALE, *Deputy Minister.*

Department of Agriculture,
Ottawa.



The map outlines the principal forested areas of Canada, indicating also some of the chief centres of the lumbering and pulp and paper industries. Including the smaller units, the sawmills of the Dominion number thousands. Pulp and paper plants, representing a very large scale type of industry, are relatively few in number.

IV

FOREST ASSETS OF THE DOMINION

Deeply written in the commercial history of Canada is the story of the lumbering industry. From earliest times the forest has been the main source of materials for construction. First commercial activities consisted of the production of square timber, but there rapidly developed industries for the manufacture of wood into various products. To-day, the ramifications of Canadian wood industry are myriad.

The greatest and most spectacular progress has occurred during the last twenty-five years, owing to stupendous development in the pulp and paper industry, and to the introduction of large-scale mechanical logging and saw-mill operations, particularly on the Pacific coast.

A Great Domain for Permanent Forestry

Of Canada's land area of 3,600,000 square miles, only a small percentage was originally open plain. Great areas have since been cleared, but, even if all lands suited to agriculture were brought under cultivation, there would still remain about three-quarters of the whole. Of this non-agricultural land about one-half is suited to

timber production and its chief utility lies in that direction. Canada has, therefore, 1,200,000 square miles of *absolute* forest land. This area will contribute permanently to the needs of forest industry.

Situate in a northerly latitude, this forest is primarily suited to the growth of conifers, commonly called "softwoods," and fortunately so, for while rare hardwoods of the tropics may command fabulous prices the market for such woods is very limited. The urgent demand of the world, to-day, is for softwoods. In the production of softwoods, therefore, lies the true destiny of the Canadian forest.

Canada's Diversity of Forest Regions

The distribution of Canada's forests is indicated by the accompanying map. While certain hardwoods are indigenous to the West, it is only in southern Ontario and Quebec, and parts of the Maritime Provinces, that true hardwood forest is found. Farther north, in Eastern Canada, is a mixed forest of hardwood and softwood; still farther north, the conifers predominate; while in the true northern forest the commercial timber is almost entirely coniferous.

It was in the mixed forest of middle Ontario and Quebec that the gigantic white pine trade had its birth and prospered. In this region conditions for the growth of pine are ideal. For general use no better wood can be found. Other important conifers in Eastern Canada are the spruces, red pine, hemlock, balsam, cedar, jackpine and larch.

In the wooded parts of the Prairie Provinces white spruce is the important commercial tree, interspersed with extensive stands of jackpine on the lighter soils, while on poorly drained lands are found the black spruce and larch. On the east slope of the Rocky Mountains, also, the forest is essentially of the spruce-pine type with an admixture of other conifers. Widely distributed in the West, but of lesser importance, are poplar and white birch.

In British Columbia entirely different conditions obtain. On the coast are heavy stands of Douglas fir, red cedar, sitka spruce, western hemlock, balsam fir and other species. In drier parts of the interior, yellow pine, Douglas fir, western larch, Engelman spruce,

lodgepole pine and other species of lesser importance predominate. Finally, typical of the interior wet-belt, are the red cedar and western hemlock, associated with other species. Although British Columbia has a few hardwoods the commercial species are not very important from a trade standpoint.

The Volume of Timber Supplies

Canada's *softwood* supplies are estimated at 440,000,000 M feet, board measure, and 870 million cords of smaller material suitable for pulpwood, fuel, posts, etc., aggregating 198,000 million cubic feet. Of *hardwoods* there is estimated to be 42,000,000 M feet, board measure, and 407 million cords of smaller material, aggregating about 48,000 million cubic feet. Of both hardwoods and softwoods, therefore, the stand approximates 246,000 million cubic feet.

Of this quantity only one-half may be considered commercially accessible. An appreciable part may never be exploited, but the development of new avenues and methods of transportation are continually extending present limits of exploitation. Large areas, now of little commercial interest, will contribute to future demands.

The Growth and Trend of Development

Until twenty years ago, when wood became the main material in pulp manufacture, the lumber industry held sway. In the East, and later in British Columbia, a large trade developed in lumber, lath and shingles. So long as large logs were available the eastern provinces competed strongly in American and European markets and for many years held the lead in lumber output. These provinces still compete, but with the opening up of extensive operations on the Pacific coast, using large-scale methods, the Pacific region forged to the front. To-day the largest single contribution to Canada's lumber trade originates in British Columbia, where over 70 per cent of the Dominion's saw-timber supplies are situated.

Decline in the lumber industry of Eastern Canada has, however, been offset by phenomenal development in the pulp and paper industry. In the latter the spruce and balsam stands have found

ready market for all sizes of logs. Quebec now leads in pulp and paper production, Ontario is a close second, while New Brunswick and Nova Scotia supply much smaller amounts. British Columbia has also shared in this development, and now contributes about one-tenth of the Dominion total. Heretofore the Prairie Provinces have not participated in pulp manufacture, but within a few months a large mill in Manitoba will produce paper. It is reasonably sure to be followed by similar developments elsewhere in the Northwest.

The Financial Stature of Forest Industry

The capital invested in the forest industry of Canada approximates $666,000,000, nearly one-third in lumbering plants, saw-mills, etc., the balance in pulp and paper operations. The pulp and paper industry contributes over $180,000,000, and lumbering roundly $125,000,000, to the monetary sum of Canada's annual production. Railway ties, poles, logs, square timber, etc., bring the sum for forest products to $365,000,000. To this amount must be added $75,000,000, the net value of finished products such as furniture, doors, window sashes, cooperage, etc. The total value production from the forest is, therefore, about $440,000,000.

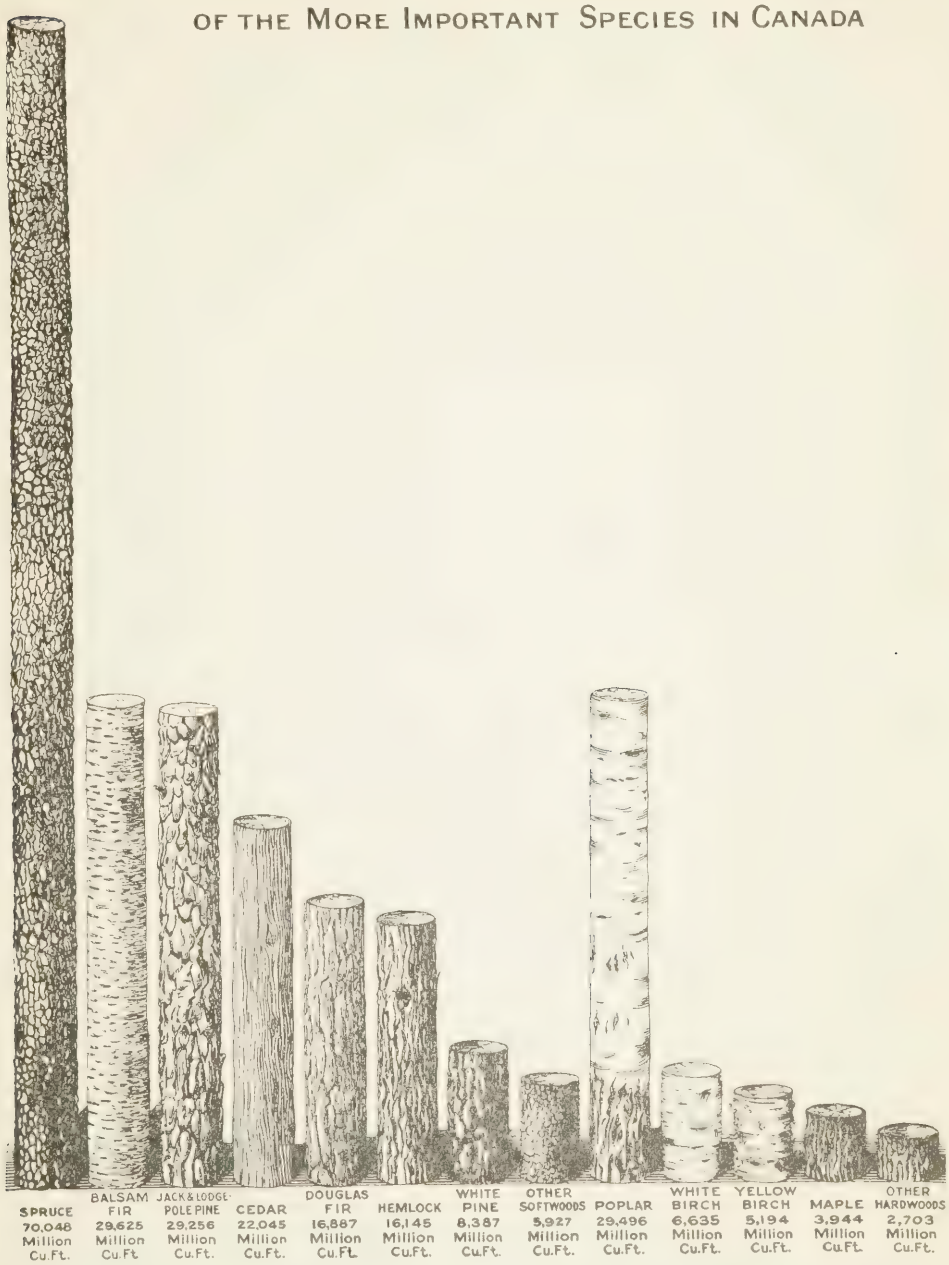
While there is no set standard or method for comparing the importance of the country's various natural assets, it is safe to say that agriculture alone takes precedence over forest resources in contributing to the economic strength and progress of the Dominion.

Features of Forest Production

Over 2,500 sawmills engage in lumber, lath and shingle manufacture. British Columbia leads in production of these commodities. The annual cut of lumber approximates 4,000 million feet, board measure. Spruce, the main species in several provinces, ranks first; Douglas fir, of the Pacific coast, occupies second place; and white pine, though the stands are now limited, still holds third position.

It is worthy of note that several species in keen demand in the world markets find their optimum development in Canada. White spruce, widely distributed and generally used for lumber and pulp

Relative Amount of Standing Timber of the More Important Species in Canada


SPRUCE 70,048 Million Cu.Ft.
BALSAM FIR 29,625 Million Cu.Ft.
JACK & LODGE-POLE PINE 29,256 Million Cu.Ft.
CEDAR 22,045 Million Cu.Ft.
DOUGLAS FIR 16,887 Million Cu.Ft.
HEMLOCK 16,145 Million Cu.Ft.
WHITE PINE 8,387 Million Cu.Ft.
OTHER SOFTWOODS 5,927 Million Cu.Ft.
POPLAR 29,496 Million Cu.Ft.
WHITE BIRCH 6,635 Million Cu.Ft.
YELLOW BIRCH 5,194 Million Cu.Ft.
MAPLE 3,944 Million Cu.Ft.
OTHER HARDWOODS 2,703 Million Cu.Ft.

manufacture, is typically a tree of northern latitudes, reaching splendid development in Canada. The Douglas fir stands of British Columbia produce lumber of such superior grades that a world-wide trade has been built up. Western red cedar, highly prized for shingles, reaches its best development in British Columbia; Sitka spruce, eagerly sought for specialized uses, is at its optimum in the Queen Charlotte Islands, British Columbia, and splendid stands are found on the mainland. Finally, the quality of Canadian white pine long ago built up for this species a world-wide reputation.

In the East, the hardwood stand is of increasing importance. Of the highly prized hardwoods Canada cannot boast, but of excellent maple, birch and beech can supply an abundance. Offering difficulty to transportation by river-driving methods, these hardwoods have not as yet been utilized to any large extent. More recently, however, with improved transportation facilities, the hardwood industry is springing into prominence, and a splendid opportunity exists for expansion of this trade.

While producing much less lumber than United States, Canada has surpassed her great neighbour in timber production for the pulp and paper trade. From 4½ to 5 million cords of pulpwood are produced annually. Three-fourths of this is manufactured into pulp in Canadian mills, a large part being further converted locally into paper and other wood-fibre products. In 1922 the paper requirements of the United States involved 9,148,000 cords of wood. Of this cordage slightly less than half came from American forests; the balance was imported as paper, wood-pulp, or pulpwood from various countries, Canada supplying 69 per cent. Putting it another way, 37 per cent of the total United States paper requirement was supplied by the Dominion.

The Trade in Forest Products

Possessing the bulk of softwood supplies, Canada has aptly been termed the "Softwood storehouse of the British Empire." Indeed, Canadian coniferous woods find their way into practically all markets of the world. The most reliable and lucrative market is the United States and, although Canada's softwood supplies are but two-fifths

those of her neighbour, the Dominion's position from a trade standpoint is strategically unique. The United States, with some twelve or thirteen times as many people, is already greatly dependent upon Canada for a large part of her softwood requirements. Her wood capital, because of her larger population, is being depleted much more rapidly than is the case in Canada.

Forest products annually comprise about one-quarter of Canada's total export trade, and the Dominion's exports of commodities classed as "Wood and Paper Products" exceed the imports by roundly $240,000,000. Forest industry thus figures as a signal factor in maintaining the strength of Canada's position in international trade.

Over 80 per cent of the exports of forest products go to the United States, accounting for one-half of all Canadian exports to that country. In the last fiscal year forest products were responsible for a favourable balance in trade with the United States of roughly $204,000,000. That Canadian trade with the United States is susceptible of material expansion is evidenced by the fact that, in the pulpwood industry alone, about 60 per cent (wood volume) of present exports to that country consist of pulpwood and woodpulp, both of which can readily be brought to a higher degree of manufacture before export. For the balance of pulpwood cut, manufacture is completed to the paper stage within Canada, this being economically the ideal condition.

Canada's Unique Advantage for Modern Forest Development

Canada holds an absolutely unique advantage in respect to one of the most vital factors affecting the modern development of forest industries—the system of forest ownership. A brief comparison with the situation in the United States illustrates the position admirably.

In the United States approximately 80 per cent of the timber was alienated in fee simple, and particularly in the Eastern States where the pulp industry was developed, outright private ownership

prevails. So long as the individual mills were of modest size this method of tenure did not retard development, and an extensive industry was built up.

In the past fifteen years, however, conditions have completely changed. Large-scale individual mills, permitting enormous volume production, are now the rule. The huge investments of the modern pulp and paper plant demand, above all, large tracts of timber carrying immense quantities of wood readily available at reasonable cost. Under private ownership, which prevails in the Eastern States, the acquirement of extensive timber tracts presents great obstacles. Timber holdings are broken up in relatively small lots, with many owners. Not only is it necessary to enter the commercial field in direct competition with other industries, but the consolidation of such small and scattered holdings sufficiently to permit of proper management adds to the difficulties.

In Canada, particularly from Quebec westward, totally different methods were followed in disposal of timber lands. Ownership of soil rights of over 90 per cent of the forest area is retained in the Crown. Of the available pulpwood stand in the Dominion only one-sixth is alienated in fee simple; a little better than one-half is under lease or license to operators subject to regulative control; and the remainder is held outright by the Crown. Under such conditions it has been and still is possible to acquire extensive and consolidated tracts of timber.

Vital Factors in Canadian Progress

This method of land tenure has played a vital part in development of the Canadian industry. Indeed, involving as it does regulative control by the governments, it has been pre-eminently responsible for the migration of the industry to Canada—a migration which continues apace. State ownership of lands also lends itself admirably to permanence of the industry—so essential where financial commitments are not susceptible of amortization over short periods. In keeping with this the objective of the forest services in Canada is the administration of timber lands for sustained yield.

Canada's remarkable resources of hydro-electric power have also been an outstanding factor in development of the pulp industry. Throughout the area of interest to the industry, abundant power may be had under most advantageous arrangements.

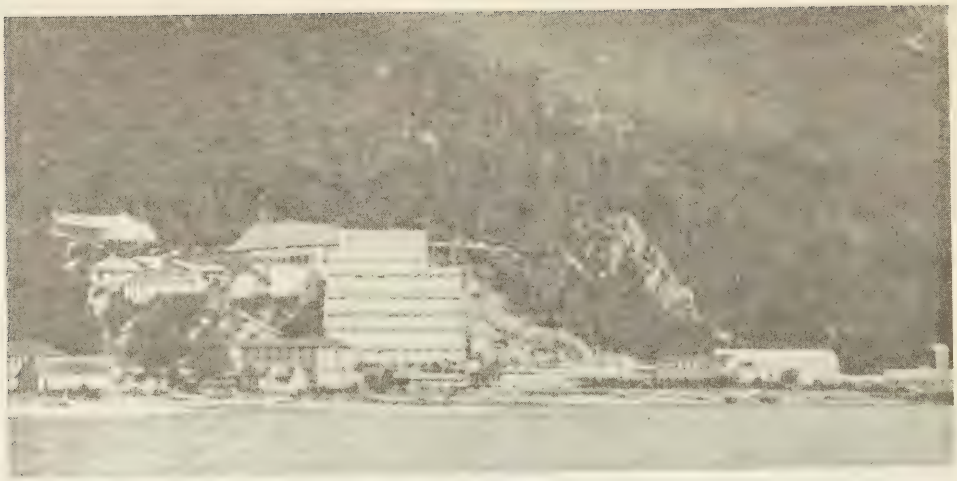
An Outlook of Singular Promise

Manifestly, with the strides already made, many of Canada's opportunities for pulp and paper development have been taken advantage of, but broad scope still exists for new forest enterprise. Moreover, the field for investment in such existing industries as are susceptible of expansion to provide for the more complete manufacture of Canadian wood into final fibre products within the Dominion, is a most lucrative one.

Owing to the critical state of timber supplies in the United States, Canada is strategically situated to benefit by the trade involved in supplying the world's greatest consumer of wood. And, by reason of ready access to tide-water from her major centres of forest production, Canada has developed and will continue to expand a widely diffused overseas trade.

Nowhere in the world do forests play a more vital part in sustaining the industries of the country than they do in Canada; nowhere in the world does financial participation in forest industry represent a more necessary and permanent activity; and nowhere in the world are the opportunities for wise investment of capital more promising than in the forest industry of Canada.

E. H. FINLAYSON,
Director of Forestry,
Department of the Interior,
Ottawa.



V

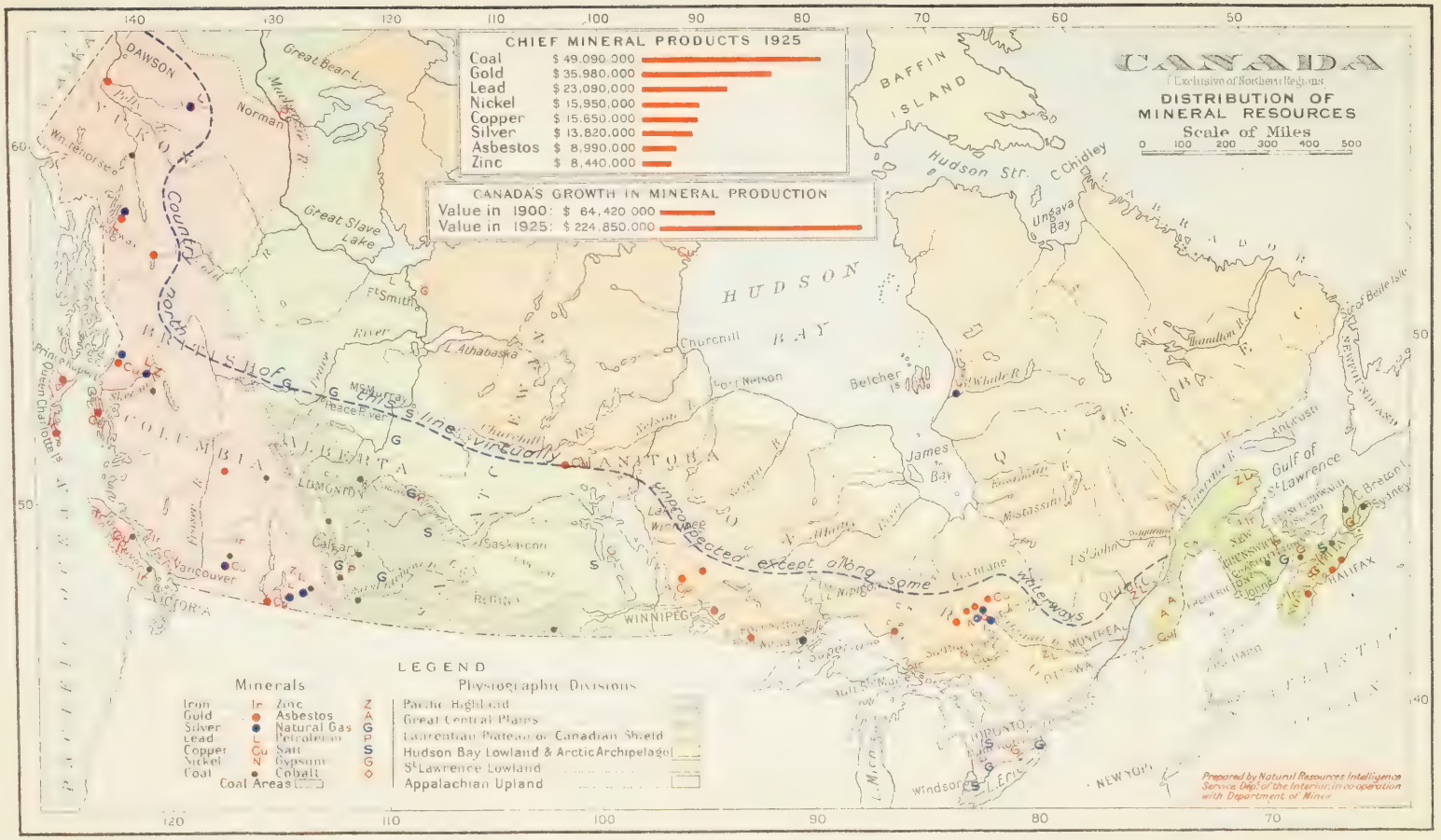
THE RANGE OF CANADA'S MINERAL WEALTH

No phase of primary Canadian development appears likely to outstrip mining in proportionate growth during the coming generation. A strong combination of commercial and physical facts lends exceptional promise to the Dominion's future as a mining country.

The extent of Canadian territory is so broad and the definite knowledge which is gained only through close field examination so incomplete, that any present evaluation of Canada's mineral resources must be accepted as a very elastic estimate. But this much is known —that from Cape Breton Island on the Atlantic coast to Vancouver Island on the Pacific, a distance of over 3,000 miles, and from the international boundary to the islands of the Arctic there are few extensive regions of the Dominion that do not show evidence of being richly endowed with some form of mineral wealth.

The Progress of Mining Development

The year 1925 witnessed a total mineral production in Canada valued at nearly 225 million dollars. This output may well be regarded as setting a new high record, for though the valuation of 1920 was not quite reached it must be borne in mind that the level



With the great natural divisions of the country as a background, the above map indicates a limited number of important Canadian mining centres, and of mineral occurrences in the little prospected northern hinterland—selected merely to illustrate the breadth and diversity of the Dominion's mineralized areas.

of metal prices was approximately 35 per cent higher in that year than in 1925.

For the thirty-year period, from 1895 to 1925, the curve of Canadian mineral production shows an average rise of about $6,300,000 a year. Allowing for a normal growth of population and a corresponding growth of mineral consumption, and also taking into account the fact that possibly 80 per cent of Canada is as yet wholly unprospected, it may be expected that this rate of increase will continue for many years.

Even more striking has been the growth of mineral output per capita. In 1890 the mineral production of the Dominion was $3.50 per capita. By 1920 it had risen to $26.40, an increase of well over 600 per cent in thirty years. Allowing an ample discount to cover the rise in the prices of mine products during this period, the annual increase per capita in quantity production was still impressive.

Obviously the physical field that has afforded the Canadian mining industry such scope for expansion is one of exceptional interest. To appreciate the Dominion at all clearly and fully from a mining standpoint, the country must be studied in the light of its great natural regions, rather than in the light of its more familiarly known provincial and other political divisions. Canada is naturally divided into a series of five major physical regions, each of which exhibits features of singular interest in relation to mineral resources and mining development.

The Mineral Wealth of The 'Canadian Shield'

The region variously known as the 'Canadian Shield,' the 'Laurentian Plateau,' or the 'Pre-Cambrian area' at present holds premier attention in Canadian mining interest. This great area embraces about 95 per cent of Quebec, 80 per cent of Ontario, three-quarters of Manitoba, one-half of Saskatchewan, a small portion of Alberta, and a vast share of the Northwest Territories. Covering over 2,000,000 square miles, it comprises more than half of the total area of the Dominion and has given startling evidence in comparatively recent years of being one of the world's largest storehouses

of precious metals and other mineral wealth. In similar formations are found the Rand of South Africa, the Mysore mine of India, and most of the great mines of Australia.

This region has several achievements of world-wide fame to its credit as a mineral-producing area. The Sudbury nickel-copper camps have produced over 350 million dollars in nickel alone and are the source of 85 per cent of the world's nickel supply. The Ontario silver fields, including the famous Cobalt camp, have yielded over 360 million ounces of silver. Other notable silver camps in this vicinity are the Gowganda and South Lorrain. The development of gold mining in Ontario has been even more spectacular, the total gold production to the end of 1925 exceeding $180,000,000. The Porcupine camp is the leading producer, followed by the Kirkland Lake, which has likewise made remarkable showings. The Porcupine camp includes the famous Hollinger mine, the second largest gold producer in the world. This property mines and treats 5,500 tons of ore daily and expects eventually to increase the output to 8,000 tons.

A new camp giving active evidence of rapid development is the Rouyn, where the Noranda mine is already said to have over 50 million dollars worth of copper-gold ore blocked out. Promising discoveries have also been made at Red Lake in Western Ontario and in the Bulldog-Long Lake area of Manitoba.

In this pre-Cambrian area are found the great copper-sulphide deposits of Flin-Flon and the gold-bearing ores of Wekusko lake in Northern Manitoba, the extensive beds of iron ore on the Belcher Islands of Hudson Bay and the native copper outcrops on the Coppermine river. And, apart from the minerals already mentioned, this region includes occurrences of zinc, the rare metals of the platinum group, graphite, arsenic, feldspar, corundum, apatite, mica, talc and molybdenite.

The Highly Mineralized Pacific Belt

The Canadian Cordillera or Pacific Highland, an area exceeding 500,000 square miles in extent, is a recognized mineral-bearing field. Including British Columbia, a narrow strip of Alberta, the Yukon

Territory and a portion of the Mackenzie district, it gives the Dominion a large and rich share of the highly mineralized "backbone" of the American continents.

Earliest developments in this area were inaugurated by a rush of placer miners to the famous Cariboo fields which yielded over 50 million dollars in the course of a few years. Other placer camps that held the attention of the civilized world during the height of their sway were the Omineca, Cassiar and Klondyke. The latter has produced over 175 million dollars in placer gold since 1897. While placer mining has waned, the production of gold, silver, copper, lead and zinc from lode mining has rapidly increased. The Premier mine of northern British Columbia has made a remarkable record in this respect, and the Sullivan mine is one of the great lead-zinc deposits of the world. Rossland and Slocan have been enormous producers of mineral wealth and the copper mines of Britannia and Anyox have occupied outstanding positions among the copper mines of the British Empire.

An Exceptional Range of Products

The Canadian Cordillera, like the Laurentian Plateau or pre-Cambrian region, exhibits a notable variety of mineral resources, widely distributed. These include gold, silver, lead, copper and zinc as the chief metal products, with smaller amounts of arsenic, antimony and platinum. The chief non-metallic resource is coal, of which there are extensive reserves. Other products include a wide range of the more common non-metallic and structural materials.

By virtue of this diversity of mineral deposits British Columbia has long held a leading position in Canadian mining activity, and to-day possesses a great and growing chain of mining and metallurgical enterprise. Mining, in fact, occupies a rank of relatively greater importance in British Columbia than in any other province of the Dominion.

Mineral Resources of the Maritime Region

The Maritime or Atlantic provinces of Nova Scotia, New Brunswick and Prince Edward Island, and the peninsula of Gaspé in Quebec, fall within what is known as the Appalachian division of

Canada. Within this region may be included, for present purposes, those areas of southern Quebec and Ontario generally referred to as the St. Lawrence Lowlands. The Quebec section of these lowlands contains varied deposits of non-metallic ores, notably asbestos, while the Ontario portion has produced petroleum, natural gas, salt, and a wealth of structural materials.

The Atlantic provinces contain a widely diversified list of mineral resources. Bituminous coal of excellent steam and coking qualities is the principal product and has been mined for over 200 years. The known coal reserves are estimated at over 2,188 million metric tons. It is worthy of note that the only coal deposits found immediately on the Atlantic coast of North America are those of Cape Breton Island.

Almost inexhaustible quantities of gypsum occur in Nova Scotia and New Brunswick, while the asbestos mines of Quebec supply 80 per cent of the world's requirements. Enormous bodies of rich oil shales await development, and the iron ores of this region are disregarded at present only because of the proximity of the remarkable Wabana deposits of Newfoundland. Fluxing material occurs in abundance. Other mineral resources of these regions include gold, arsenic, antimony, manganese, tungsten, lead, zinc, copper and a large range of the non-metallics. A notable deposit of rock salt has recently been developed, while many of the other minerals have been profitably mined for years.

The Great Plains as a Mineral Region

The Great Plains region is primarily an agricultural area and its association with mining activities is relatively little known. Yet it is in this territory that some of the world's greatest reserves of non-metallic minerals are stored. The most prominent of these is coal. It has been estimated that this region contains coal reserves amounting to about 15 per cent of the world's known supply. Within the last two decades Alberta has become the scene of a considerable coal-mining industry.

It also seems reasonably sure that important reservoirs of crude petroleum await development. Drilling has been carried on from the

international boundary to within a few miles of the Arctic circle, and oil has actually been found at several points. The results in the Turner valley in southern Alberta have been of outstanding interest with respect to the gasoline content. Quantities of natural gas underlie much of this area and vast deposits of bituminous sands are found on the Athabaska river.

Other resources include rock salt, brine springs, gypsum, refractory clays, natural sodium sulphate, volcanic ash and building stone, of which the beautiful mottled Tyndall limestone of Manitoba merits special mention.

Progress in Metallurgy and Mineral Manufacture

Canada's advance in the metallurgical industries has kept pace with the progress of basic mining enterprise. Recent construction at the Trail smelter, where electrolytic refining of lead, zinc and copper is now successfully conducted, has made this plant the world's greatest non-ferrous metallurgical works. Other developments of signal importance include the tremendous advance in electro-chemical and electro-metallurgical lines in areas served by hydro-electric power on the tributaries of the St. Lawrence and at Niagara. With the completion of works now under construction in the Saguenay district, Canada will become the world's leading producer of aluminium.

To an impressive extent mineral products enter into Canadian industrial life as raw materials of manufacture. An analysis of various features of Canadian manufacturing activity during recent years reveals the fact that the mineral-manufacturing industries account for slightly over one-fourth of the Dominion's total of capital investment, of number of employees, and of gross value of manufactured products. The number of mineral-manufacturing plants exceeds ten thousand, and for 1924 the gross value of manufactured products of mineral origin was 879 million dollars.

Mining Investment and Employment

The confidence displayed by the Canadian people with respect to mining development is reflected in their holdings of domestic

mining securities, which are exceptionally large for a relatively new country. While it is true that the United States and Great Britain are heavily interested in the Dominion as a mining field, Canadian capital exceeds that from all external sources combined, by a liberal margin.

The total investment in Canadian mines amounts to approximately 632 million dollars. Of this about 282 million is invested in metal mining and in metallurgical works treating Canadian ores, 259 million in non-metallic mines, and 91 million in properties and plants producing structural materials and clay products.

The mining industry gives employment to some 64,000 persons whose remuneration totals approximately 83 million dollars annually. The combined payrolls and dividends of the mining industry put into circulation well over 100 million dollars every year.

Canada's Future as a Mining Country

Three factors in particular help to illuminate the probable future of the Canadian mining industry: (1) its past performance; (2) the known mineral reserves and the great extent of unprospected areas; (3) the rising world demand for minerals.

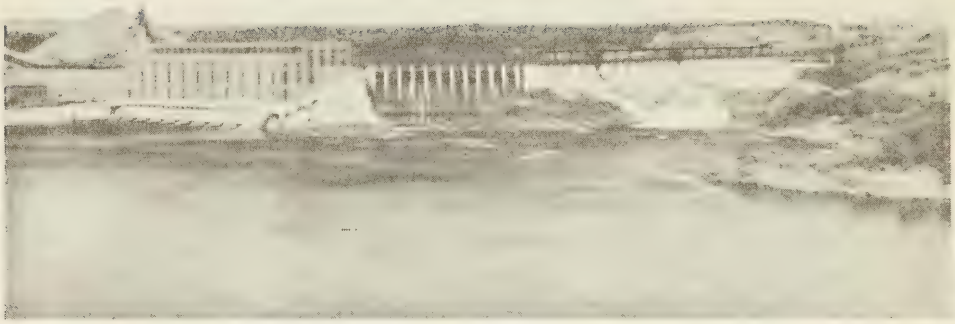
The past performance of the industry exhibits a steady rate of growth which is likely, at least, to be maintained. The vast known reserves of many minerals and the huge potential field for further discovery give every reasonable assurance of ample scope for the growth of mining development.

The third factor in the situation relates to the all-important question of mineral markets. In recent years the mining industry of the world has been faced with an astonishing growth in the demand for mineral products to meet the needs of modern civilization. The full momentum of this rising world demand can scarcely be realized. One competent authority points out that the world's mineral production in recent times has doubled every ten years, and that more minerals were produced and consumed in the first quarter of the present century than in all preceding time. The mineral resources of the older countries are gradually being exhausted and Canada

holds a position of singular strength in relation to the world's chief mineral-consuming markets. It is almost inevitable that the demands from abroad for Canadian mineral products will steadily become greater, more varied, and more insistent.

Viewed from all angles, the Canadian mining industry may be said to enjoy, both physically and commercially, the strongest assurance of broad and long-continued growth.

CHARLES CAMSELL,
Deputy Minister,
Department of Mines, Ottawa.

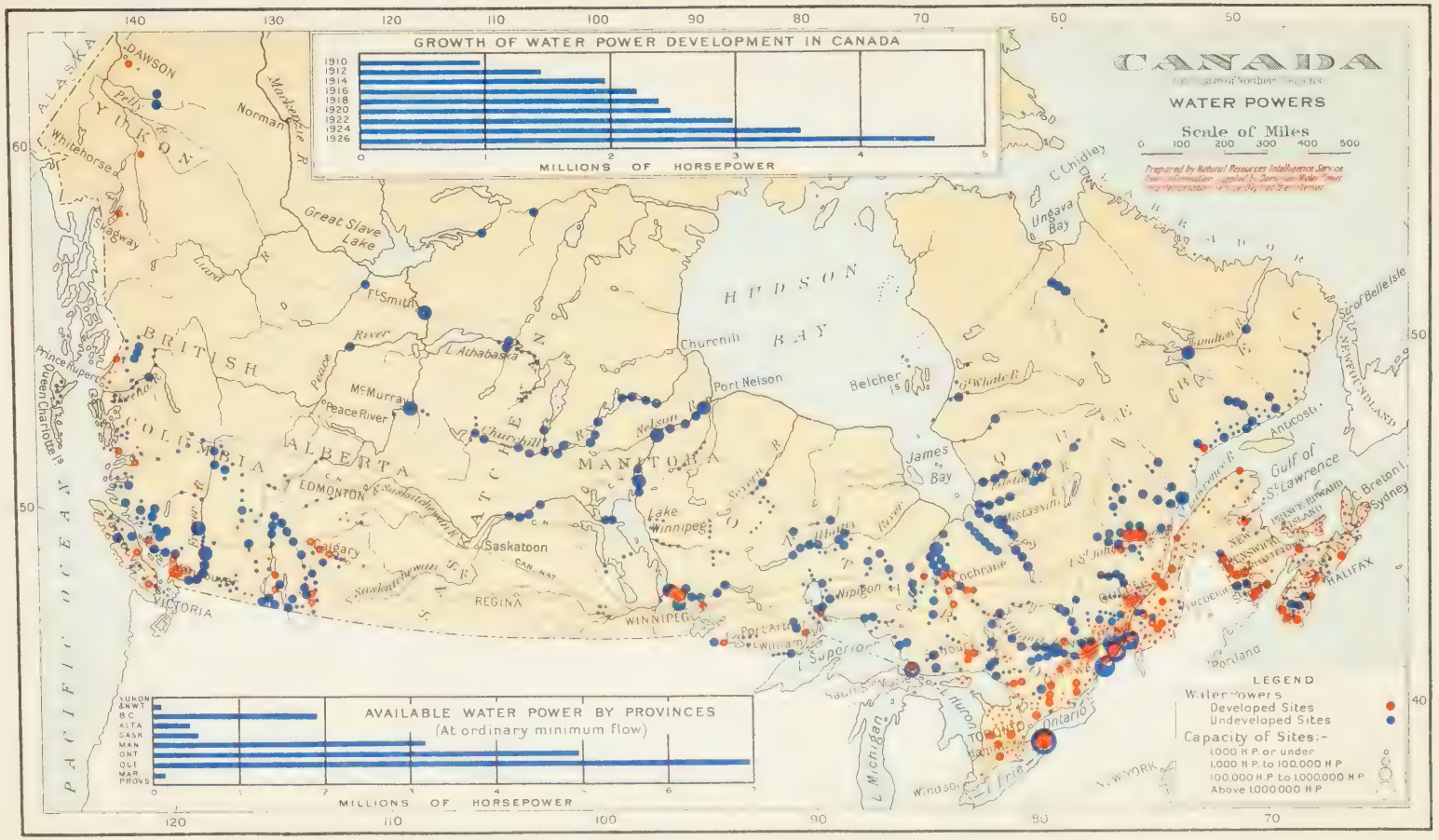


VI

CANADIAN STRENGTH IN WATER POWER

It is not too much to say that, apart from the human factor, water power is the most versatilely active force behind Canadian industrial development, and that the Dominion's continued progress along these lines is insured by the abundance of low-priced power afforded by this resource.

The full measure of the value of water power to Canada cannot be gathered from statistics alone. Its outstanding value lies in the comparatively even distribution, from coast to coast, of ample power that can be economically developed near centres of industry—rather than in the total amount, large and impressive as it is, of the power available in the whole Dominion. And secondly, in marked contrast with the general rule, its signal national utility arises from the low cost at which this favourably located power can be made available, and not from its high selling price as a final product. Power is essentially an implement to be used for the development of other resources, for the production of manufactured goods, for the operation of railway systems and for the lighting of homes; and the lower the rate at which it can be supplied the greater and the more widely diffused is its economic benefit to the country.



Canada's water power resources are well distributed from coast to coast, and there is ample power available within easy transmission distance of all of the larger cities. The regions containing the least water power—the southern portions of Alberta and Saskatchewan—possess large resources of coal.

The Manifold Influence of Water Power

This invaluable resource has enabled Canada to develop from an almost wholly agricultural country to a manufacturing country of first importance. To an increasing degree, inexpensive power has been a magnet drawing to the Dominion from abroad important industries whose output goes to augment Canadian export trade. Hand in hand with this industrial development the widespread distribution of power for domestic use has, in a dozen different ways, effected a decided increase in the comfort of living for the mass of the population.

The versatile effect of the asset stored in this abundance of hydro-electric energy is particularly in evidence in the coal-less provinces of Ontario and Quebec, which contain the principal centres of population and manufacturing in the Dominion. Here water power has not only enabled successful competition with the mass production of other countries but has rendered Canada's industrial structure largely independent of imported fuel.

Water Power and Primary Development

On the utilization of her water power mainly depends the development of a wide range of Canada's other resources. An adequate supply of low-priced power is the essential basis of the pulp and paper industry and to a very large extent of the mining industry, notably in the fields of northern Ontario and those of northern Quebec, Manitoba and Saskatchewan now coming into prominence. Not only does the use of neighbouring water powers permit of the economical development of these mining areas, but the cost at which power can be supplied enables the mining operations to be extended to immense masses of low-grade ores whose recovery would otherwise not be feasible. The added wealth of the country arising from this phase alone is difficult to estimate.

The final importance of water power may be judged from the fact that the capital now employed in its development and distribution far exceeds that of any other Canadian industry.

The Extent of Available Water Power

The term "available" water power as used herein represents the total resources, including those already developed. The available resources are usually expressed in two ways, *i.e.*, based upon the stream capacity at ordinary minimum flow or upon the stream capacity at ordinary six-month flow. The latter is considered the practical commercial capacity of the river, with regulated flow or fuel auxiliary over low-water periods.

The available resources which have been definitely ascertained, but which should not be considered as by any means inclusive of all resources, may be summarized by provinces, as follows:—

AVAILABLE AND DEVELOPED WATER POWER

	Available horse-power		Installed turbine horse-power
	Minimum	Commercial development	
British Columbia	1,931,100	5,103,500	415,702
Alberta	475,300	1,137,500	34,107
Saskatchewan	513,500	1,087,800	35
Manitoba	3,270,500	5,769,400	183,925
Ontario	4,950,300	6,808,200	1,784,842
Quebec	6,915,200	11,640,100	1,746,386
Nova Scotia	20,800	128,300	65,327
New Brunswick	50,400	120,800	44,631
Prince Edward Island	3,000	5,300	2,274
Northwest Territories and Yukon	125,200	275,300	13,199
	18,255,300	32,076,000	4,290,428

It may therefore be stated that, in round numbers, the known available water power in Canada within the limits outlined is 18,255,000 horse-power under conditions of ordinary minimum flow, and 32,076,000 horse-power available under condition of ordinary six-month flow, with 4,290,000 horse-power installed.

The installed turbine horse-power includes plant for utilizing water at times of high flow, as well as reserve plant. Thus Canada's total available power, reckoned on the same basis, would probably

correspond to nearly 42,000,000 installed horse-power—*so that only some ten per cent of the recorded resources are so far utilized.*

The proprietary interest in the water power resources of the provinces of Alberta, Saskatchewan, Manitoba and the Northwest and Yukon Territories and of the Railway Belt of British Columbia is vested in the Dominion. Through the remainder of the country the water powers are vested in the provinces. Stream measurement and other investigatory work is carried on by the Dominion Government, in close co-operation with the respective provincial authorities charged with water power administration. Information concerning the power capacity of any river or district is available in the Dominion Water Power and Reclamation Service of the Department of the Interior.

The Favourable Distribution of Resources

The distribution of water power in Canada in respect to the centres of population and industry is most favourable. Reference to the table given above and to the accompanying map will show that sources of supply are well distributed from coast to coast, and it may be added that there is ample water power available within easy transmission distance of all the larger cities. In the districts containing the least water power, that is to say, in the southern portions of Alberta and Saskatchewan, there are large resources of coal.

The significance of the distribution of Canadian water power resources, in relation to its present and future requirements, may be appreciated when it is realized that eighty-two per cent of the developed water-power and roughly sixty per cent of the total resources, are situated in Ontario and Quebec, which also contain eighty-two per cent of the manufacturing industry of the Dominion. The advantages of this favourable distribution of water power are being more widely realized as the development of other natural resources throughout Canada is progressively undertaken.

The Growth of Development

The water power situation in Canada to-day is one of accomplished results, of a record development per capita, of increasing

construction work, and of large expansion in view for many years to come.

During the past ten years the developed water power has increased at an annual average rate of nearly six and three-quarters per cent. This, however, includes the war period when many projects were in abeyance. During 1923 the increase was over twelve per cent and during 1925 over twenty per cent.

The notable increase of over one million horse-power during the past two years becomes more significant when one considers the enormous sum of money required for these enterprises, and the readiness with which it has become available for them and for the vast undertakings now in progress. These expenditures involve not only the cost of creating the works for the development of power but also the cost of providing for its profitable use.

The Range and Diversity of Recent Projects

Domestic and foreign capital has shown the greatest confidence in Canadian hydro-electric development and associated enterprises, with the result that both publicly and privately owned installations have been readily financed.

In Ontario 332,000 horse-power new installation was added during the past two years. Of this, 220,000 horse-power was in the Queenston plant and 25,000 in the Nipigon plant of the Hydro-Electric Power Commission. Privately owned enterprises included 48,000 horse-power on the Abitibi river and 17,000 horse-power at the outlet of the Lake of the Woods for pulp and paper manufacture.

Over 600,000 horse-power was developed in Quebec during the same period. This huge total included 20,000 horse-power on the Quinze river for mining, 200,000 horse-power for general distribution on the St. Maurice, St. Francis, Ottawa and St. Lawrence rivers, and a mammoth development on the Saguenay river by the Quebec Development Company. On the latter project 360,000 horse-power of an ultimate 540,000 horse-power installation, was completed for pulp and paper and other purposes at an estimated expenditure of $30,000,000.

Nor has progress been confined to the enormous development in Quebec and Ontario. Two private corporations in British Columbia were together responsible for 60,000 horse-power new installation; in Manitoba the City of Winnipeg increased the capacity of its municipally-owned plant on the Winnipeg river by 21,000 horse-power; and in the Maritime Provinces the Nova Scotia Electric Power Commission installed 12,000 horse-power.

The Program of Current Activity

Great as these increases have been, even greater are in progress. The 800,000 horse-power development of the Aluminum Corporation of Canada at Chute à Caron on the Saguenay river involves an investment of some $80,000,000, and the series of plants of the Gatineau Power Company on the river of that name will have an initial capacity of 373,500 and ultimate capacity of 700,000 horse-power. The Gatineau developments will supply a 400-ton paper mill, whilst the remainder of the power is largely contracted for by the Ontario Hydro-Electric Power Commission.

Thus a large amount of construction work is now in hand and still more in view. It is estimated that some 230,000 horse-power will be completed in 1926, a further 400,000 horse-power in 1927. The additional work, which is practically assured, will aggregate some 1,900,000 horse-power in the three or four years after 1927—and this figure excludes probable new developments on the St. Lawrence, Ottawa and Niagara rivers, which cannot yet be said to be actually assured.

The Record of Investment Strength

The stability of Canadian water power investment is a subject on which there is much information available from reliable sources. Study of the range of prices of the bonds and stocks of leading Canadian hydro-electric companies and of their dividends during the past ten or fifteen years, as shown by the Montreal and Toronto Stock Exchange records, affords convincing evidence of the stability of the capital and the regularity of the interest.

The record of stability of Canadian water power investment far exceeds even that for banks, railways and municipalities. Careful investigation has shown that over the last twelve years, which includes the war period, not one company failed. Only four small companies temporarily passed their bond interest and the total amount of principal so involved was less than one-fifth of one per cent of the total average capital invested in water power during that period. The confidence inspired by this class of security is shown by the large investments of life insurance companies in the bonds and stocks of water power companies, and by the competition between various Canadian interests and outside capitalists to secure the development of sites on the St. Lawrence, Niagara and Ottawa rivers and elsewhere.

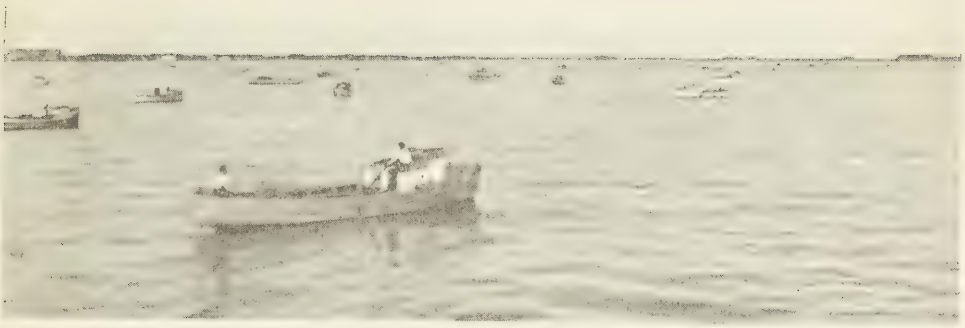
A Commanding Feature of Canada's Outlook

The foregoing summary of the trend of water power development in Canada, which is based upon exhaustive investigation carried out for other purposes, shows that from past history, from work under construction, and from conservative estimates of the aggregate of current projects planned under the most substantial auspices, the rapid rate of expansion may be expected to continue for many years to come. Recent study relating to the outlook in Ontario and Quebec indicates that the installed horse-power will probably increase from 3,532,000 in 1925 to about 8,150,000 in 1945. The new capital required for the development, transmission and distribution of this power will probably be not less than $1,369,000,000 during the twenty years, or an average of over $68,000,000 per year.

Industrially, financially—from almost every angle of economic outlook—water power stands in a commanding position on the horizon of Canadian development.

J. T. JOHNSTON,
Director of Water Power,
Department of the Interior, Ottawa.

While the commercial fisheries of Canada centre on the Pacific and Atlantic coasts, the Dominion possesses also a unique endowment of inland waters. The Great Lakes, Lake Winnipeg and countless other fresh water fisheries combine with those of the Atlantic and Pacific to give the Canadian fishing industry a remarkable width of distribution.



VII

THE DOMINION'S FERTILE FISHERIES

The asset Canada owns in her fisheries is only beginning to be realized. There is, nevertheless, a total present investment of roundly $46,000,000 in the industry and last year (1925) the marketed value of Canadian fish and fishery products exceeded $47,900,000. The industry is now rapidly expanding year by year and has enormous possibilities.

Canadian Fisheries are Second to None

Fisheries form a particularly valuable asset to a nation. Fish caught in the high seas and landed in the ports of a country are an importation for which no money goes abroad. Moreover, unlike mineral resources, the fisheries as a capital asset are not depleted by any reasonable use.

While participation in the fisheries of the high seas is open to the world, geography plays a part in their development that cannot in the long run be offset. The country lying adjacent to prolific fishing banks—the shallower areas of the sea to which fish resort and constitute the great producing areas of the commercial fishermen—and the country further so situated that it can readily and

economically ship its surplus abroad, commands a natural opportunity to dominate such fisheries beyond that enjoyed by other nations equally interested but less fortunate in their position.

Having regard to these essential factors, Canada may with propriety claim to have, within ready economic reach, fisheries which in quality, quantity and variety are second to none anywhere.

The Fertile Waters of the Atlantic

In close proximity to the coast of Nova Scotia are all the important fishing banks on the western side of the Atlantic. Added to these is the Gulf of St. Lawrence, practically a continuous fishing bank. Then all along the territorial and immediately adjacent waters, extending for a length of five thousand miles from the boundary in Passamaquoddy Bay to the Newfoundland Labrador, the coast is frequented not only by the cod, haddock, and other species found on the offshore banks, but by mackerel, herring, salmon, smelts, etc., and by such shellfish as lobsters, oysters, scallops and clams.

This whole extent of coast is dotted with sheltered harbours, bays and coves, from which the inshore fishermen can operate with comparative ease and safety. Indeed, these inshore fishermen still produce the bulk of the Atlantic product.

Nova Scotia's Geographical Advantages

A glance at the map reveals the strategic position of the coast of Nova Scotia as a base from which to engage in the Atlantic bank fisheries. The principal fishing banks on the western side of the Atlantic are Georges, Browns, Roseway, LaHave, Sambro, Emerald, Sable Island, Canso, Misaine, Banquereau, St. Pierre, Green and Grand. Georges bank, it is true, is not much nearer to Nova Scotia ports than it is to Boston, Gloucester or Portland, but when operations are being conducted on the large more easterly banks the advantages of Nova Scotian ports become increasingly great. For instance, a vessel fishing on Sable Island bank is but 88 miles from Canso and 159 miles from Halifax, as contrasted with 470 miles

from Boston and 438 miles from Portland. Or, again, a vessel fishing on the Grand banks, 465 miles from Canso and 588 miles from Halifax, is 928 miles from Boston and 884 miles from Portland.

Fishing for the fresh, frozen or smoked fish trade, the rapidly growing branch of the industry, and the one in which the main expansion is to be made, a vessel should not be absent from port many days at a time—say a maximum of a fortnight, and it should be less. With a speed of ten miles an hour, a vessel fishing out of Boston on Sable Island bank would have to spend 94 hours in coming and going, as against only 32 hours for a vessel operating out of Halifax. The Boston vessel would spend twenty-eight per cent of her time sailing to and from port, and the Halifax vessel slightly less than ten per cent. The cost of maintenance is at least equally great when so engaged as when fishing. The Halifax vessel could make practically three trips to port while the other would be making one, and would still be able to devote an equal length of time to actual fishing.

Market Factors and Prospects

Added to these physical features in favour of Canadian fishermen, further commercial advantages of extreme importance arise from the superior quality of the fish landed, a superiority due to the shorter time they are out of the water, and from the readiness with which in these days of wireless a vessel can be recalled to port if market conditions make such desirable. From a transportation standpoint the interior markets of North America can be reached as conveniently and as efficiently from Nova Scotia ports as from any on the Atlantic seaboard.

The market situation with respect to trans-Atlantic trade is one of active interest. To supply the growing demands of the European markets for fresh and smoked fish, the fishermen there are journeying far afield. Already dealers in Great Britain and France are looking to the possibilities of increasing their supplies from the fishing areas on this side of the Atlantic. It would cost too much to have their trawlers operate from European ports as a base, but it has already been demonstrated that fish shipped over from Nova Scotia by

regular traffic boats readily sell in competition with the locally landed product. All that is necessary to extend the industry to the western side of the Atlantic is suitable transportation facilities.

The Varied Pacific Fisheries

The fishing industry of the Pacific coast is of much more recent origin than that of the Atlantic but has rapidly forged ahead. The value of its products is now about equal to that of the Atlantic fisheries, though the tonnage of fish landed is less.

The main Pacific development has been in the salmon and halibut fisheries. While the halibut are consumed largely by the North American markets, the canned salmon goes to all parts of the world and the demand for it is continually growing. Herring are being produced in even larger quantities than on the Atlantic coast but, owing to the absence of remunerative markets for the pickled product, this fish is mainly shipped in a dry-salted condition to the Orient. Pilchards in great quantities also frequent the coast and during the past two years a large industry has been built up in converting these fish into meal—an excellent animal food—and oil. The whale fishery of the Pacific has for years been a highly important industry. Other fisheries, such as the cod and flounder, have great possibilities but await development.

What has been said with regard to Canada's geographical advantages in respect to the Atlantic fisheries applies also to those of the Pacific. The deep sea fisheries of the Pacific—halibut, cod, flounders, etc.—lie mainly off the coasts of British Columbia and Alaska, to which the transcontinental railway ports of Prince Rupert and Vancouver are most readily available.

The Harvest from Inland Waters

In addition to the sea fisheries, the Dominion possesses remarkable inland fishery resources. Apart from the Canadian waters of the Great Lakes and the minor interior lakes of Ontario, which annually produce fish worth upwards of $4,000,000, the Prairie Provinces and the Territories to their north are dotted with lakes

of great size, abounding in such valuable species as whitefish, pickerel, salmon trout, tullibee, sturgeon and others. While the more readily accessible lakes are being fished to as great an extent as it is considered they will stand, without depletion, such vast bodies of water as Lake Athabaska, Reindeer lake, Great Slave and Great Bear lakes, await more favourable transportation facilities to enable the commercial use of their resources.

The Export Trade

The per capita consumption of fish throughout the Dominion is comparatively small and one of the signal features of Canadian fisheries development is its heavy dependence upon export markets. The value of the annual exports is at least half and frequently much more than half of that of the total yearly fisheries output. In this respect the fishing industry is comparable to the Dominion's great wheat-growing and pulp and paper developments, though it does not depend upon markets abroad to quite the same degree.

The Canadian export trade in fish has long been established on a large scale, averaging in recent years a total value considerably in excess of $30,000,000. The list of export products includes a great variety of items. Canned salmon ranks as the premier export in point of value, while dried codfish, canned lobster, dry-salted herring, fresh lobsters, smelts, whitefish, and lake trout, fresh and frozen halibut and salmon are some of the other commodities of large importance. Many additional species and products contribute substantially to the trade in fresh, frozen, pickled, smoked, dried, canned or other forms.

The trade reaches a very wide range of markets. The United States, taking well on toward half of the total exports, is the chief customer. Very important markets are found also in the United Kingdom, in France, Belgium and Italy, in Cuba, Porto Rico and the British West Indies, and in Oceania and the Orient—not to mention scores of other markets in practically every quarter of the globe to which considerable sales of Canadian fisheries products are regularly made. In short, the fisheries trade is one of the most widely diffused branches of Canada's export commerce.

Federal Aid to Development

Precaution is exercised by the Federal Department of Marine and Fisheries to assure Canadian fishery products being up to first standard. All fish canneries must be operated in accordance with regulations which assure that none but perfectly fresh fish are used and that the canning operations are conducted hygienically and efficiently in every particular. All pickled and packaged fish must be put up in accordance with the requirements of the Fish Inspection Act, and the plants handling fresh fish are under continuous supervision.

Moreover, the Department is seeking to aid the industry by solving for it difficulties that may be experienced in preparing fish for market, and by demonstrating the best methods of such preparation. To that end a Fisheries Experimental Station is maintained on each coast. These stations are equipped and manned with the object of enabling them to do everything for the fishing industry that experimental farms do for agriculture. Also, through the Marine Biological Board, scientific stations are maintained, in connection with which investigations into the life history of fish, etc., are being continuously carried on.

The Outlook for Expansion

The foregoing brief survey of Canada's fisheries indicates the exceptional possibilities they afford for expansion. While it may be too much to say that the sea fisheries are inexhaustible, there can be no room for doubt that vastly greater quantities of fish than are now being obtained could be produced from the fishing areas adjacent to the Dominion's Atlantic coast, without detriment to the supply. And such production can most economically be effected from Canadian ports.

Apart from the halibut and salmon fisheries, which are now being so exploited that measures must be taken to safeguard them from depletion, the same situation holds true with regard to the Pacific coast waters. In this instance, also, the fisheries can most economically be conducted and expanded from Canadian ports.

It is safe to conclude by adding that, in the whole range of Canada's natural assets, no major class of resource appears physically capable of supporting greater proportionate growth than the fisheries.

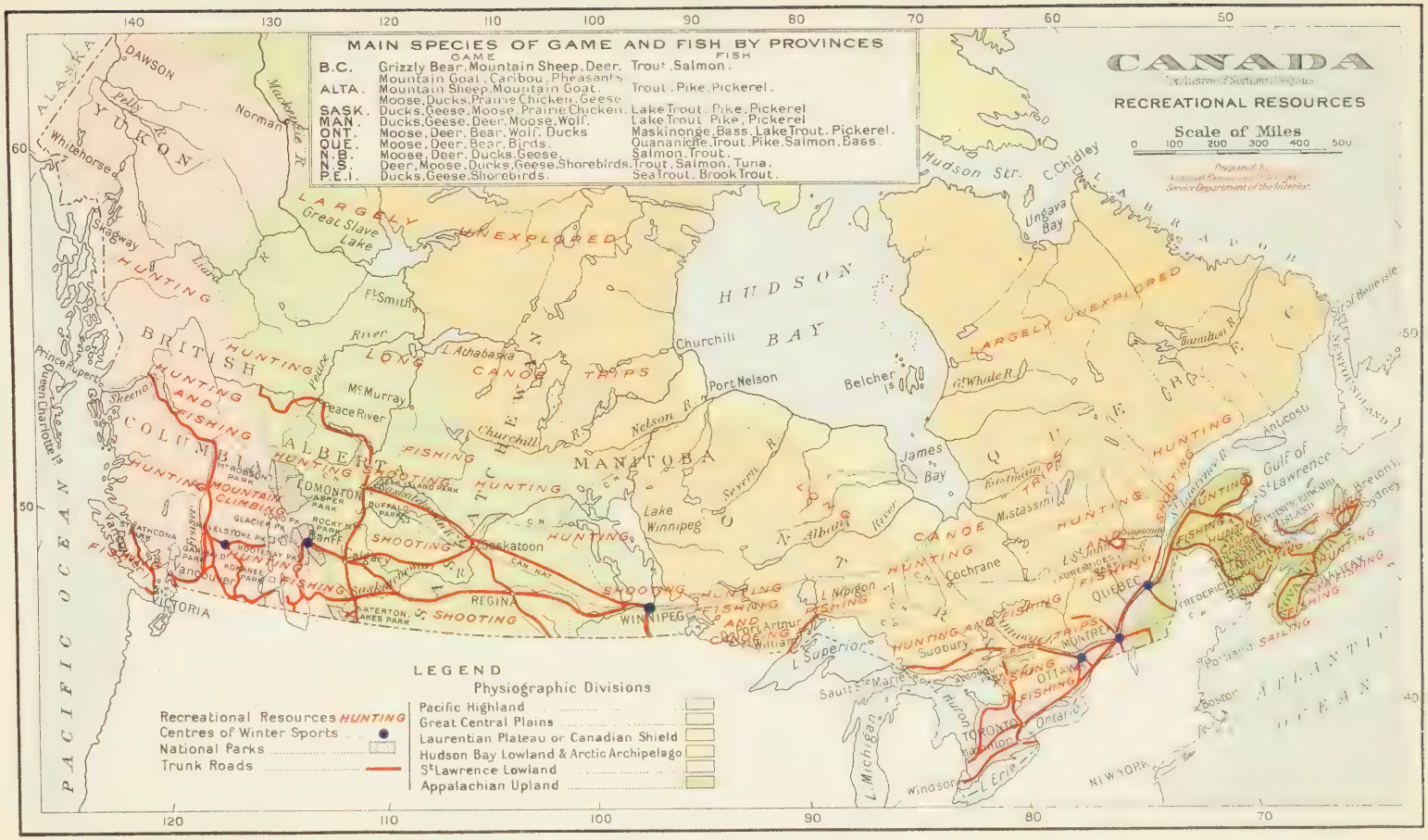
WM. A. FOUND,
Director of Fisheries,
Department of Marine and Fisheries,
Ottawa.

VIII

CANADA'S RECREATIONAL WEALTH

Beyond disowning any desire to reduce the value of Canada's scenic and other natural attractions solely to a dollars-and-cents basis, there need be no apology for including such resources among the Dominion's great material assets. The modern balance-sheets of nations contain some remarkable evidence of the commercial value of recreational resources. They reveal the fact that the world's annual tourist business is in the "billion-dollar" class. Like the commerce in wheat, wool, steel, coal, oil and other major commodities, it is one of the giants of competitive world trade. A dozen or more countries, fortunate in their ownership of strong recreational attractions of one form or another, enjoy tourist revenues which rank among the heavy credit items of their international accounts.

Viewed purely from a business standpoint, Canada's recreational resources are a national asset of the first order. They are the lodestone which each year draws millions of visitors to the Dominion and they form a varied source of wealth which, though hard to estimate with any degree of accuracy, annually adds a large and rapidly growing item to the national income. There are, in fact, few records in the annals of Canadian development more interesting or more remarkable than that of the manner in which recent years



While scenic attractions are beyond portrayal in map form, the chains of inland waterways, the hunting and angling regions, the distribution of national and provincial parks, the network of main motoring highways and other features help to suggest the scope and variety of Canada's recreational regions and resources.

have enhanced the economic importance of the Dominion's recreational features. To-day these assets keep company with the farms and factories, the mines, forests, fisheries and other major factors contributing to the vigour and variety of Canadian business life.

The Growth of Canadian Travel

In early days the lure of adventure in an unknown country attracted many visitors to Canadian shores. Later, the construction of the first transcontinental railway opened a new and greater channel to travel and sight-seeing within the Dominion, affording the traveller facility and comfort in crossing from the Atlantic to the Pacific. But it remained for the advent of the automobile to create within the last few years an utterly amazing increase in the volume of Canadian holiday movement and to reveal the potential value of the Dominion's fields of recreation.

Some idea of the extraordinary growth of holiday traffic may be gained from the records of touring automobiles entering Canada in recent years. Between 1919 and 1925 the number of cars receiving permits to enter the Dominion for a period of thirty days rose from 59,000 to 481,000, while the number entering for twenty-four hours increased from 177,000 to 1,945,000. Nearly two and one-half million automobiles visited Canada in 1925 for touring purposes—more passenger cars than there are in the whole of Europe.

Aside from the phenomenal increase of motor tourists, railway and steamship lines each year add enormous numbers to the thousands who holiday in Canada. Tapping an even wider field than the automobile, these organizations have spread the Dominion's fame as a holiday land literally throughout the world.

A Series of Striking Recreational Regions

The most casual traveller crossing the Dominion cannot but be struck by the sheer diversity of Canada's natural features. A thousand miles of rugged Atlantic shore—a thousand miles of inland lakes, seas in depth and size—a thousand miles of rolling prairie, the "bread-basket of the Empire"—a thousand miles of mountain scenery

rivalling the Alps in grandeur—and finally a thousand miles of winding coast washed by the warm waters of the Pacific—all these contribute to the shifting scene of a transcontinental trip across Canadian territory.

But Canada's attraction rests only in part on mere extent or variety of landscape. It owes no less to the peculiar spell always associated with those regions of a new country where the work of nature remains unmarred by man. To an unusual degree the Dominion's wealth of natural beauty exhibits the quality of contrast—magnificent modern resorts competing in appeal with vast wooded or mountainous regions still awaiting their first explorer.

The 'Maritimes'

The charm of the 'Maritimes' is not easily depicted. These provinces—Nova Scotia, Prince Edward Island, and New Brunswick—are toned with the mellowness of age that captivates the visitor from newer regions. The snow-white lighthouse crowning the cliffs that overlook the sea; the listless sail of the fishing smack lazily seeking its sheltering cove; the quaint fishermen's cottages that straggle up the hillsides; or the shaded inland roads and the winding forest streams; the springtime mantle of blossom that clothes mile on mile of orchard valleys; these suggest the elements that blend to give the Maritimes a picturesqueness peculiarly their own.

In this setting is found all that goes to complete the happiness of the holiday visitor—excellent facilities for motoring, boating, fishing, hunting, and all outdoor recreation. The fishing of the Maritimes, notably the brook trout, Atlantic salmon, tuna and swordfish, is famous the world over. Ducks, geese, plover and snipe are abundant on the numerous bays and inland lakes. Deer are plentiful and the moose the finest of their species on the continent.

The St. Lawrence River and Great Lakes

Reaching from the Gulf of St. Lawrence to the head of Lake Superior, a voyage of 2,000 miles, one of the world's great systems of interior waterways traverses Eastern Canada. Nowhere exists an

inland water route more varied than that of a journey up the storied St. Lawrence, touching at historic Quebec and busy Montreal, the second port of North America. Leading on through the Thousand Islands and the Great Lakes, with calls at Toronto, Niagara Falls and a dozen other centres of commercial or scenic interest, such a voyage reveals the heart of industrial Canada and leaves a vivid impression not only of the natural beauty but of the business life of the Dominion. From the Saguenay to Thunder Bay this chain of Canadian waterways traces a matchless course for lake-and-river travel.

The Laurentian Upland—Canada's Lake Country

The Laurentian region—the huge horseshoe skirting Hudson Bay to the east, south and west—is the country of forest and stream, of hunting, fishing, and canoeing, of great unexplored areas. Countless lakes and rivers form a network of dustless highways routing the canoeist through a hinterland where trout, bass and maskinonge, moose, deer and bear, stock a superb field for the sportsman.

This upland, a veritable empire of hundreds of thousands of square miles, bids fair to win pre-eminent rank among the recreational assets of the North American continent.

The Prairies

The prairies, best known as the pioneer's 'land of opportunity,' are less familiar as a holiday region. Yet, for thousands of visitors, the fertile western plains with their endless miles of golden grain still retain much of the freedom, freshness and sweeping grandeur immortalized by Bryant.

Beautiful lake resorts nestle in the valleys. For the enjoyment of the sportsman few fields offer finer attraction than the hunting of prairie game birds—ducks and geese, prairie chicken, grouse and Hungarian partridge. The network of motor roads and railways traversing the settled regions likewise lends ready access to the northern wooded territories where the Athabaska and Mackenzie, Churchill, Nelson and other noble waterways trace their blue lines a thousand miles to the Arctic or the shores of Hudson Bay.

The Mountains of the West

For scenic splendor the highlands of Western Canada have been declared by many experienced mountaineers to be unsurpassed. Within their area twenty Switzerlands could be tucked. Majestic ranges, scarred by age and weather, rear their summits against a sky of purest blue or bury their snow-capped peaks in fleecy clouds. Glaciers and waterfalls, emerald-blue lakes and wooded valleys contrast to entrance the eye and add enchantment to an alpine air fragrant with the scent of pine and fir.

Facilities for travel or sojourn are not lacking. Motor road, railway and packtrail open endless vistas of changing beauty. Cosy mountain lodges and modern hotels extend every comfort and convenience.

The mountains are noted for their big game—bighorn sheep, grizzly bear, rocky mountain goat, elk, deer, moose, black and brown bear and mountain lion. Ptarmigan frequent the mountain tops, and grouse the lower levels. Migratory birds such as ducks and geese abound on the lakes and inlets, pheasants on the Pacific coast. And trout fishing is a prime attraction of these mountain regions.

National Parks

In the western mountains, superbly equipped by nature for pleasure and recreation, the Federal Government has set aside nearly 10,000 square miles as national parks, an area two-thirds as great as Switzerland and almost as large as Belgium. Here some of the finest of Canada's alpine regions, in all their virgin beauty and wildness, are being preserved for public use for all time.

There are seven national parks in the Canadian Rockies—Rocky Mountain, Jasper, Yoho, Glacier, Mount Revelstoke, Kootenay and Waterton Lakes parks. Apart from the mountains many other choice areas are being permanently preserved for recreational purposes—Wood Buffalo park (home of the wood buffalo), Buffalo, Elk Island and Nemiskam parks in Alberta, Point Pelee and St. Lawrence Island in Ontario, and Fort Anne in Nova Scotia. The provinces

also have made liberal provision for parks, including Strathcona, Garibaldi, Mount Robson and Kokanee parks in British Columbia, Algonquin in Ontario and Laurentides park in Quebec.

North America's Travelling Millions

Over and above the physical beauty and range of Canada's recreational resources—barely suggested by the foregoing sketch—a number of other striking factors combine to place the Dominion in a truly remarkable position for the attraction of the traveller, sportsman and holiday-seeker.

Modern life has multiplied both the need and the means of vacation far beyond all previous experience. Travel is no longer the special privilege of the relatively few, possessed of wealth and leisure. Particularly in North America the annual holiday trip has become the habit not of thousands nor hundreds of thousands but of millions. And the situation in which Canada to-day finds itself is probably without parallel in any age.

Bordering the Dominion, clear across the continent, is the United States and its tens of millions of people with the means and inclination to travel. Added to the great quotas of railway and steamship traffic there is the new "world on wheels." For 1926 the American Automobile Association estimated that 36,000,000 Americans would spend their vacations on motor trips, incurring an expenditure of roundly $2,000,000,000. Each year a mounting tide of this enormous flood of tourist travel turns toward the Dominion. Within a single summer month more than half a million tourists have been admitted through one Canadian port of entry—Niagara Falls—and the sum of $190,000,000 is the amount estimated by United States authorities in forecasting the expenditure of American visitors to Canada in 1926.

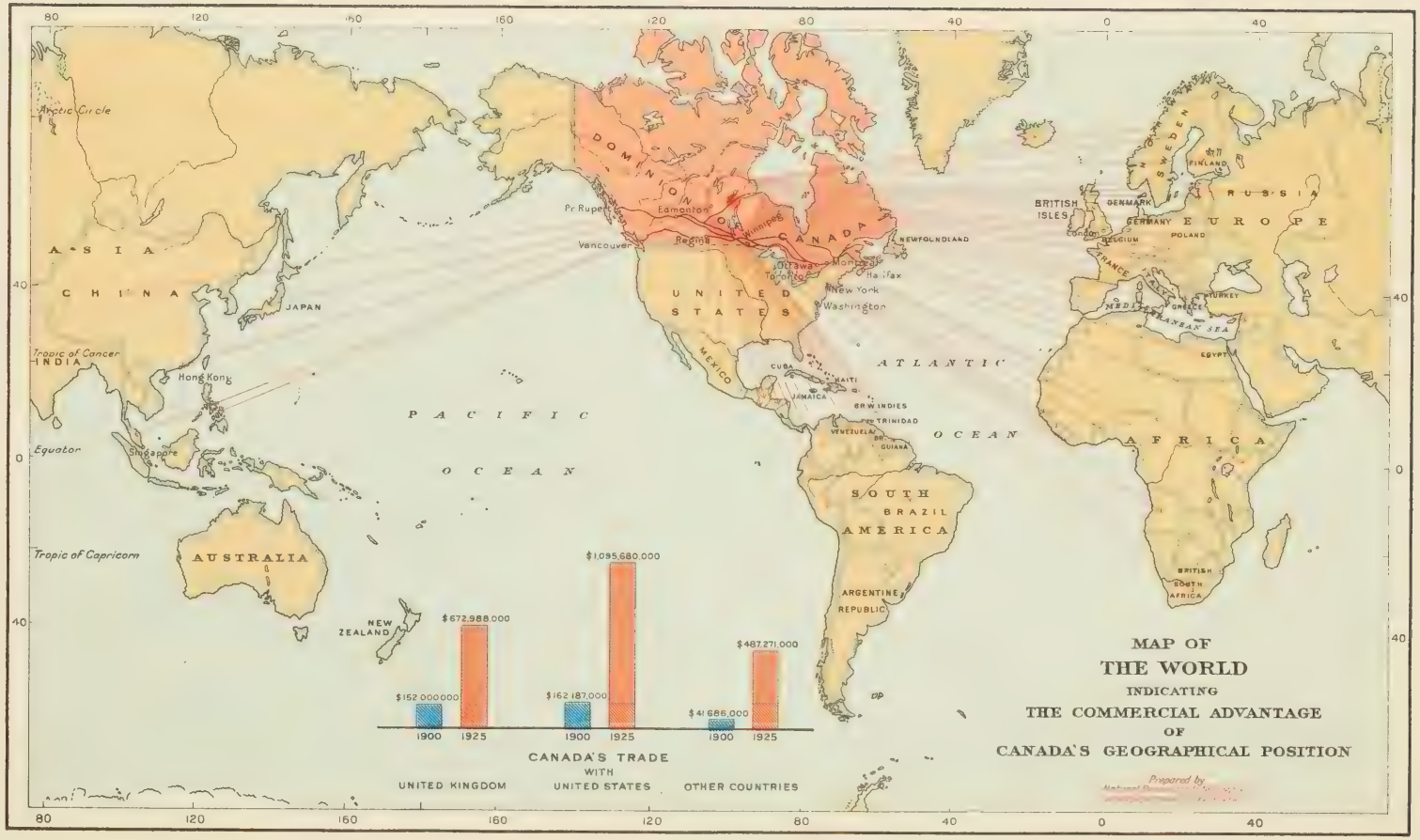
It is indeed doubtful whether the world has ever before witnessed such an international exchange of holiday-seekers as now annually crosses the thousands of miles of Canadian-American border.

A Major Force in Future Canadian Development

The future of the Dominion as a field for what may be termed "recreational development" is without question one of the signal features of Canada's commercial outlook—fully comparable in import with the prospects for agricultural, mining, manufacturing and other forms of economic growth.

The holiday movement from the United States into every section of Canada, already colossal, is still in its early stages—is very largely the growth of less than one decade. Its future volume is wholly beyond conjecture. Coupled with the unique situation presented on the North American continent, there is every reasonable likelihood that the stream of tourist travel reaching Canada from the mother country, from sister dominions, from Europe and the world at large will exhibit a constant if more moderate gain.

Taking into account the scope, the variety and the steadily widening renown of the Dominion's recreational attractions, there is ample ground for the view that these natural assets will, through their direct and indirect commercial effects, prove to be one of the major forces of Canadian development in the next generation.



The remarkable rise of Canada's external commerce reflects the advantage of the country's geographical position, as well as the productive value of its resources. The diagrams illustrate the growth of trade abroad, especially with the United Kingdom and United States, while the red lines indicate the world-wide diffusion of merely one main export commodity—wheat flour.

IX

THE SITE VALUE OF THE DOMINION

Impressive as is Canada's estate in the form of lands and forests, water power and minerals, fisheries and recreational regions, those items furnish but a partial accounting of the Dominion's natural wealth.

They omit, for instance, the magnificent waterways which in both pioneer and modern times have given Canadian commerce a remarkable transportation asset. Not only the unique St. Lawrence-Great Lakes system but a dozen great waterways, ranging from the mouth of the St. John on the Bay of Fundy to that of the Mackenzie on the shores of the Arctic, have played a part of inestimable importance in Canada's economic history. Collectively they rank as one of the Dominion's major physical assets.

Again, Canada's renowned fur resources, pre-eminent in the earlier trade of the country, still figure as a decidedly active contributor to its business life. The service rendered by the fur trade to Canadian development has always been vastly greater and more varied than is suggested solely by the monetary value of fur production from year to year.

But, entirely apart from the importance of furs or waterways or forests or lands or any of the items usually described by the term "natural resources," there is at least one other physical feature of Canada which clearly belongs among the front-rank factors shaping the Dominion's whole economic outlook.

Canada's Position on the Globe

The element of "site value" applies to a national estate no less vitally than to a farm or city property. And there are few countries on the face of the globe more entitled than Canada to include the item of physical location as one of their chief commercial advantages. The site value of the Dominion is unquestionably one of the strongest single forces behind Canadian development to-day.

The geographical position of Canada has not always been regarded as one of great advantage. Fifty or a hundred years ago the site value of the territory now embraced in the Dominion was pretty generally viewed as a minus quantity. Whatever attention it received was mainly in the form of reference to the climatic handicap imposed by the country's northerly latitude. And even to-day the geographic situation of Canada is discussed chiefly in that light.

As a matter of fact, the whole commercial importance of Canada's position on the globe has been altered almost beyond recognition as a result of the march of world events in the last generation or two. The Dominion has experienced an improvement in value somewhat akin to the amazing rise of land values in the heart of a great and growing city.

World Progress in Relation to Canada

The nineteenth century was an era of unparalleled material progress—an era which witnessed the virtual doubling of the world's population, the growth of great industrial nations and huge consuming markets, the settlement of vast new agricultural areas, revolutionary advances in land and ocean transportation, and the rise of international commerce on an enormous scale. And the main scenes of this colossal development were laid in such regions as to have the effect of placing Canada to-day literally on the front street of world enterprise.

Western Europe and the United States are the two headquarters of modern industry, and the North Atlantic the chief thoroughfare of world commerce. Canada's North Atlantic seaboard, giving prompt access to the British Isles and Continental Europe, combines with its 4,000-mile frontage facing American territory to make the Dominion's geographical position one of unmatched advantage in relation to the heavy consuming markets of the business world. Added to these facts is the further importance of Canada's location with respect to the densely-populated countries of the Orient. Canada's Pacific ports and seaboard are not surpassed by any portion of the Dominion either in activity of current development or in strength of long-time commercial prospect.

The modern site value of the Dominion is not easily appraised. Prone to be viewed purely in the light of the competitive advantage of Canadian products in reaching the British Isles or the United States, it actually amounts to a great deal more than mere facility of access to export markets. That is simply its most obvious and direct effect.

Capital's Scrutiny of Canada

The physical position of the Dominion lends an immeasurable stimulus to Canadian growth quite aside from the ordinary buying-and-selling transactions of trade. It places Canada closely under the eyes of the world's centres of capital—of capital which is not merely abundant or passively available, when sought, but which is actively linked up with the initiative and capacity of experienced business interests keenly on the lookout for openings for constructive enterprise. That fact is vividly confirmed by the huge volume, diverse sources and varied objectives of the capital invested in Canada from abroad during the last quarter-century. It forms a stronger and more certain factor in Canada's outlook to-day than ever.

Under present-day conditions the physical position of Canada commands a short route to the financial centres of both the Old World and the New World. Not only does it afford prompt access to ample sources of capital for all sound or promising purposes—it virtually guarantees that no real opportunity for business expansion

within the Dominion can long escape attention, let alone suffer neglect. Canadian opportunities are subject to continuous and searching scrutiny by well-equipped Canadian business forces. But, in addition, there is probably no other country in the world where domestic enterprise is more strongly reinforced by outside capital and initiative ready to apply itself to the development of forests, mineral areas, water powers, and other basic resources, and equally alert to enter any phase of the manufacturing or mercantile field.

In brief, so far as access to capital is concerned, Canada is about as well assured as any country could be of developing in future just as rapidly as its relative natural wealth and other attractions warrant.

The Net Effect of Canada's Position

Over and above its effect upon trade and upon the country's capacity to attract the attention of capital and enterprise, the location of Canada asserts itself in countless ways. It keeps the Dominion in intimate touch with every feature of the progress made by the most advanced nations—with progress in agriculture, industry and transportation, in finance and commerce, in education and every activity which directly or indirectly acts as a spur to economic efficiency and growth. The debt Canada owes to its close contact with every phase of British and American progress is beyond calculation.

There is no need to overlook the handicaps that have to be balanced against the advantages of Canada's location on the globe. The nearness of the Dominion to great consuming markets, for instance, is not an entirely one-sided matter, since it entails the proximity of countries which are no less active as industrial competitors than as commercial customers. Again, due allowance must be made for the effect of geography upon the Canadian climate; likewise for the fact that in many respects American development has acted not as a spur or aid but as a heavy check to Canadian progress. And it is also to be borne in mind that many of the advantages enjoyed by Canada are the fruit of bonds of blood, language and political association rather than the effect of physical location.

But having due regard to all of these discounts, there is still an enormous net site value to Canada's geographical position that must be reckoned among the country's outstanding physical assets. It is an asset which has appreciated amazingly in very recent years and promises to serve as a factor of incalculably greater influence in promoting the Dominion's future development.

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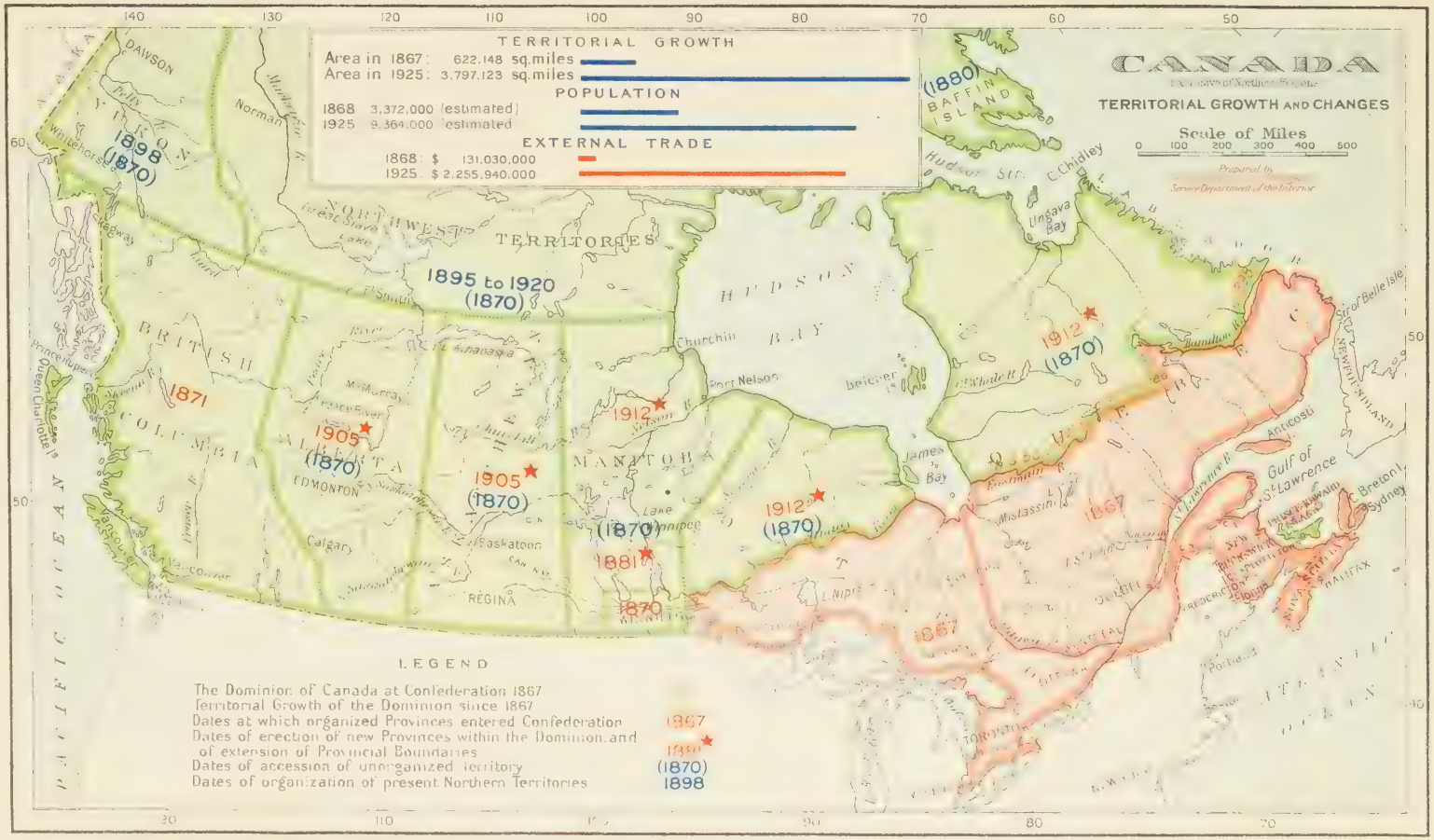
CANADA'S DEVELOPMENT OUTLOOK

Viewed in the light of its physical strength as a national property —its strength of resources and of location—Canada to-day is not highly or intensively developed. In fact, a glance at the present intensity of Canadian development reveals a very surprising situation. It likewise helps greatly toward getting a clearer grasp of the Dominion's outlook.

Extensive and Intensive National Growth

In most countries *intensive* development becomes the chief avenue of national advance after settlement has overrun the more attractive areas and left but limited or less inviting room for further *extensive* growth. That has been the history of Great Britain, United States, Germany and other well-populated nations. The particular method of acquiring intensive development, however, has varied sharply as between different countries.

For instance, China and India have remained devoted chiefly to agriculture but, by means of intensive cultivation combined with a low standard of living, they manage to sustain an extreme density of population. England, on the contrary, turned from agriculture to urban industry and trade as the main support of its intensive



The Dominion originally included only a relatively small area, mainly tributary to the Atlantic seaboard and to the St. Lawrence-Great Lakes waterway. Today it embraces a national territory strongly contrasting in extent, and in political as well as economic development, with the area and aspect of the original Canadian Confederation of hardly sixty years ago.

growth. The United States has pursued more of an intermediate course, acquiring heavy "industrial" growth in all directions but at the same time maintaining agriculture as the great foundation of its economic strength.

But, whatever its manner of growth, the actual intensity of economic development in most countries is usually reflected fairly well in the number of persons in the country per thousand acres of improved farmland. That index is not faultless but is probably as true a measure, as any, of the degree of intensity. The population per square mile of national territory, frequently used as an index in this connection, is not always a good test. It is especially misleading with respect to countries which, though highly developed in their better regions, happen to possess large areas of waste territory.

Canada's Stage of Development

Canada to-day presents a stage of development of remarkable interest. In any country, new or old, extensive and intensive growth are more or less concurrent and it is impossible to say exactly when one becomes the senior and the other the secondary factor in national advance. But there is every evidence that Canada has now reached, or closely approached, a great turning-point in its career. The country's present "economic balance" is wholly without parallel in modern North American progress as represented by the growth of the Dominion and the United States in the last generation or two.

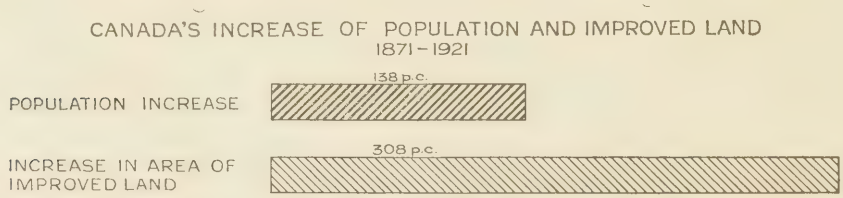
A brief glance backward gives perhaps the best perspective upon what the future holds out for Canada along the line of intensive development. While comparison with the United States is open to some objection, it nevertheless has a decided value in helping to bring out more clearly the recent record and the present position of Canada in regard to intensity of development.

The Trend of Fifty Years' Progress

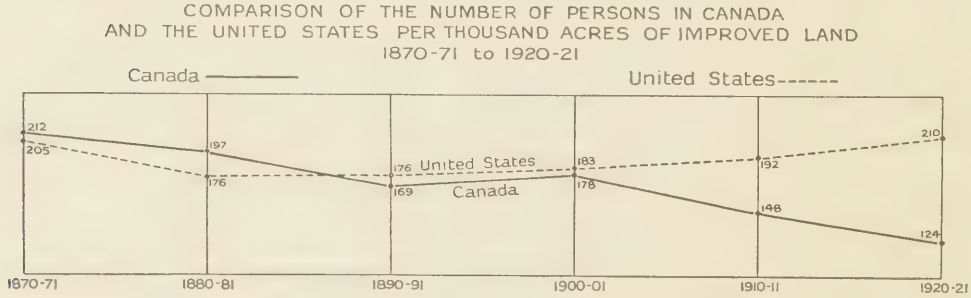
A half-century ago both Canada and the United States were mainly agricultural and their respective populations bore a very similar ratio to their respective areas of improved land. For every

DIAGRAMS INDICATING THE TREND IN THE "INTENSITY" OF CANADIAN DEVELOPMENT

During the past fifty years or more, Canada's area of improved land has increased much more rapidly than the Dominion's population. Between 1871 and 1921 the growth of population was 138 per cent, while the growth in the area of improved land amounted to 308 per cent:—



The result has been that the number of persons in the Dominion, per thousand acres of improved land, has steadily declined. But the present situation strongly suggests that Canada, with its natural capacity to sustain varied agricultural and industrial enterprise, is ripe for a long upward trend in intensity of development, somewhat similar to the trend in the United States since about 1890:—



It is a notable fact that Canada's population would now be over 15,000,000 instead of rather less than 10,000,000, if the ratio of population to the extent of improved land were as high today as it was fifty years ago.

thousand acres of improved land Canada had 212 persons and the United States 205 persons. The Dominion then, as now, possessed a much smaller settled area, but apparently was, if anything, slightly the more intensively developed country of the two. For a given area of improved land Canada had more population—whether engaged in agriculture or in manufacturing, mining, lumbering, fishing, trade and other pursuits.

To-day the situation is strikingly different. Both countries have in the meantime enjoyed great agricultural and great industrial growth, but their relative intensity of development has been entirely changed. The latest returns show that Canada, instead of having more persons in proportion to the area of improved land, has now not much more than half as many as the United States. In the last fifty years the number of the country's inhabitants per thousand acres of improved land has increased in the United States, but in Canada has declined by over 40 per cent.

The full explanation of this change involves many factors but hinges mainly on the fact that during the last generation the major share of American growth has been along manufacturing, mining and other *intensive* lines, while Canadian growth, featured by the immense spreading out of western settlement, has been more largely *extensive*.

Canada's Turning Point

This trend of Canadian development has probably approached its extreme. For fifty years the ratio of population to the extent of improved land has been falling almost continuously. It has already fallen much lower than it ever dropped in the United States. The number of persons in Canada, per thousand acres of improved land, has declined from 212 in 1871 to 124 in 1921, the year of latest returns. The similar trend in the United States was arrested at the low point of 176 and, since about 1890, the tendency there has been sharply upward as a result of great intensive development in the form of manufacturing, mining and other industrial pursuits.

The turning-point for Canada cannot be far away. The country has enjoyed a remarkable renewal of extensive growth during the

last two or three decades with the result that, judged on the basis of number of population in proportion to extent of improved agricultural land, the Dominion is to-day less intensively developed than it was fifty or sixty years ago. The rapid expansion of settlement over vast prairie regions, where farming is featured by the use of every labour-saving implement and by a high acreage of working land per man, has reduced to an unprecedentedly low figure the number of persons in Canada per thousand acres or other unit of improved land.

The Dominion now appears to be exceptionally ripe for a long upward trend in intensity of development.

A Broad Avenue for Canadian Advance

This present position in regard to intensity of development is one of the most significant points in the whole range of factors shaping Canada's outlook, and is perhaps the most suggestive of all in affording some idea of the possibilities of future Canadian growth.

The Dominion seems likely to experience in the next generation a trend of progress somewhat similar to that of the United States in the last thirty or forty years. During that period, despite the rising tide of rural depopulation, the advance of intensive development has enabled the United States not only to regain but to slightly increase the number of persons in the country per thousand acres of improved land, as compared with the situation of fifty years ago. In other words, the growth of American manufacturing, mining, etc., has more than offset the thinning out of rural population caused by the increased use of labour-saving farm equipment and by the disappearance of many of the old handicraft trades of rural communities.

Canada—like the United States in this respect, though vastly different in others—is admirably equipped for varied and intensive development. In fact, the most impressive physical feature of the Dominion as a national property is the sheer versatility of its resources. The country is naturally equipped with a broad and strong foundation for agriculture on the one hand, and likewise for

mining, forest industries, power development and a singular diversity of manufacturing enterprise. The Dominion's physical capacity to sustain variety of development and steadily to work back toward the standard of intensity of development that prevailed a half-century ago is little, if any, less than that of the United States. That course of development alone opens out to Canada remarkable possibilities of growth—leaving entirely out of account the room that still exists for further *extensive* development.

It is a notable fact that if the Dominion were to-day as highly or intensively developed as it was over its smaller area of settlement of fifty years ago, its present population would stand at more than 15,000,000 instead of rather less than 10,000,000.

In other words, the restoration of Canada's own former intensity of development, as measured by the ratio of population to the extent of improved land, alone affords an avenue of advance leading far toward the doubling of the Dominion's population.

Strength of National Property and Prospect

Canada's growth does not lend itself readily to forecast. Neither before nor since Confederation has it conformed for any length of time to an even rate of advance. Comparisons with the rates of progress in other countries, usefully suggestive in some respects, apply to Canada only in limited degree. The Dominion, like all other countries, has its own peculiar physical make-up. And again, as in all countries, its progress springs first and finally from the character of its own particular human resources.

But, bearing always in mind the supreme importance of the human factor, clearly the diversified natural wealth of the Dominion leaves the Canadian people little to want and nothing to envy in strength of national property and prospect. To considerable areas still available and attractive to *extensive* growth it couples a broad and varied region of remarkable promise as a field for a long upward trend toward greater *intensity* of development.

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